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F-4C/D/E
RF-4C/E
DEPOT
STENCILS

FD48039

F-4 PHANTOM
DEPOT STENCILS

The subject of F-4 stencils seems to have been done to death, yet like almost everything related to the Phantom, what we *thought* we knew about them turned out to be woefully incomplete, and in many cases, downright wrong, based on what has been produced and published in the scale modelling universe on this subject. I know, I know… I can hear your eyeballs rolling back into your head even now. But hold on - the Phantom is without doubt the coolest military airplane ever made, right? And when you think "Phantom", if you're really honest with yourself, doesn't your mental picture include an airplane literally covered with stencil data? Be honest… Of course it does! Yes, it's true there are (almost) a million of them, but it's also true that every one of them had a purpose, even if sometimes they seem so blatantly obvious that only a dunce would need to be reminded of what they say. But we digress. And a model with all these stencils on it - done well - is going to attract attention and just plain look cool! And if they are approached in a logical, systematic, and methodical fashion, and if you don't attempt to apply all of them in one sitting, they're honestly not all that difficult to do.

Photo: fündekals collection

As Phantoms entered service a heavy depot maintenance program was developed to keep the aircraft up to date, and structurally and operationally sound. In the USAF, this is called Programmed Depot Maintenance (PDM), and generally happens every six to eight years, depending on how many hours an airframe has accumulated. The jet is flown to the depot, where it is extensively disassembled to allow for diagnostics, upgrades, and structural modifications as needed.

Part of PDM is a complete strip and repaint, and that's where our decal comes in. Depending on the time period in question, and which specific depot (there were several that overhauled USAF/ANG/AFRES Phantoms over the decades), an aircraft might come out of PDM sporting a complete set of stencil data, mimicking what had been applied at the factory. Or it might have come out with an abbreviated version of that, or it might have come out with nothing at all but the most basic safety placards and servicing symbols.

Generally speaking, depot applied stencils were done in one of any number of "standard" military stencil lettering styles, but almost all of them had the common feature of being broken stencil lettering, as opposed to the unbroken Futura Heavy font style used at the factory - and occasionally by the depots (! - see below). Depot stencils were applied with paint, while factory stencils were (generally) decals.

In most cases the depot stencils conveyed the exact same information as the factory stencils, but the precise layout of the text could vary quite a bit. Our decal is meant to be representative - we couldn't possibly provide every permutation and combination seen on real Phantoms, but we think ours will help you create a good looking model. You can feel free to modify the decals as needed if you see something unique on your subject aircraft.

By the time the depots started re-painting aircraft in the mid-1960s, Southeast Asia camouflage was the order of the day. Initially, stencil data was applied in white on green, and black on tan and on the light grey belly. Later, many aircraft left the depot with everything in black. For the items that could be in either color, we have provided both white and black.

Many aircraft were only finished with the Access Door numbers, sometimes in stencil style and sometimes in the same Futura Heavy font that had been used by the factory. A complete set of Access Door numbers is supplied in Futura Heavy, with the same key numbers as the ones that also have the full text accompanying them.

Finally, some aircraft had no stencils at all other than the ejection seat warnings, rescue instructions, and NATO standard servicing symbols. By choosing your subjects carefully, you may be able to do as many as three or even four models from this decal.

We have provided many styles of national insignias seen through the Phantom's life, and on the C sheet there are insignias, NATO servicing symbols, and rescue/safety placards for the Hill Gray scheme. Most Hill Gray birds had next to no stencil data applied.

A few more notes:

- This decal covers aircraft that were refinished after their factory applied camouflage and markings had been stripped off or overpainted during PDM overhaul. Camouflage colors, patterns, and the style and number of stencils visible could and frequently did vary greatly from the factory finish. For factory applied stencils see fündekals sheet FD48038. It covers any F-4B/C/D/E/J/RF-4B/C/E from delivery until its first PDM repaint.
- Until the early 1980s, the vast majority of PDM repaints featured white stencil data on the 34079 and 34102 green, with black on the 30219 tan and the 36622 grey belly. For items on the upper side of the airframe, we have provided each item in both black and white so you can use the correct one for the specific area of your model. Since camouflage patterns varied so much (they were all applied by hand), an individual item might fall on a green area on one aircraft, but on a tan area on another aircraft. This is also true because of the change made to the standard F-4 camouflage pattern in the mid-1970s, which reduced the amount of 30219 tan on the forward upper fuselage. See camouflage section for more information on this. There are examples of the Access Door numbers being in one color and the accompanying text in the opposite color, depending on how the camouflage demarcations lay. See photo pages at the end.
- The exact location of each individual item could vary depending on who applied it, when it was applied, and where it was applied. You can cut apart the Access Door numbers from their accompanying text and rearrange them as needed.
- The Access Door decals that go on the lower wing speed brakes have been split. Typically, the number and accompanying text are painted on the speed brake itself, with just the number adjacent to it on the wing skin. Since the speed brakes are almost always hanging open on parked F-4s, this will allow easier application.
- You'll note that we haven't included anything specific to the F-4G Wild Weasel. We'll be perfectly honest and tell you that's because we ran out of steam and room to include it. The good news is, F-4G stencils are about 98% identical to F-4E stencils, with just a few extra Access Door numbers around the nose and the vertical fin. Lots of F-4Gs didn't have these applied anyway, so you can probably let it ride and nobody is going to notice. Likewise, we have not tried to cover Navy/Marines jets here. Most of them received few or no stencils after overhaul, and post-overhaul Navy/Marines F-4 camouflage is a gigantic minefield. Many of these stencils will be perfectly useable on Navy aircraft if you find a subject that requires them - have at it!
- Our best advice on how to apply these decals without losing your sanity - take it slowly and be methodical! We have broken the instructions down into small, manageable bites so you can do one small section of the aircraft at a time. We recommend printing out the relevant pages of the instructions and crossing off each item as you apply the decal to prevent confusion.

Again, here are the basic categories/styles of depot-applied stencils seen on USAF/ANG/AFRES F-4s:

- Stencils with full text accompanying each item. This is basically a re-do of the information contained in the original factory-applied stencil data. This could be in either white/black or all black, depending on the timeframe.
- Access Door numbers (no textual data), safety/rescue placards, and NATO standard servicing symbols only.
- Safety/rescue placards and NATO standard servicing symbols only.

Careful study of your sujbect will likely allow you to put it into one of these categories and to be able to plan your decal application accordingly. There were exceptions (which were really the rule...), and almost any combination of the above is well within the realm of possibility. Depending on which of the above categories of data your model requires, you may be able to get as many as four models out of this one decal!

NOW GO HAVE FUN!

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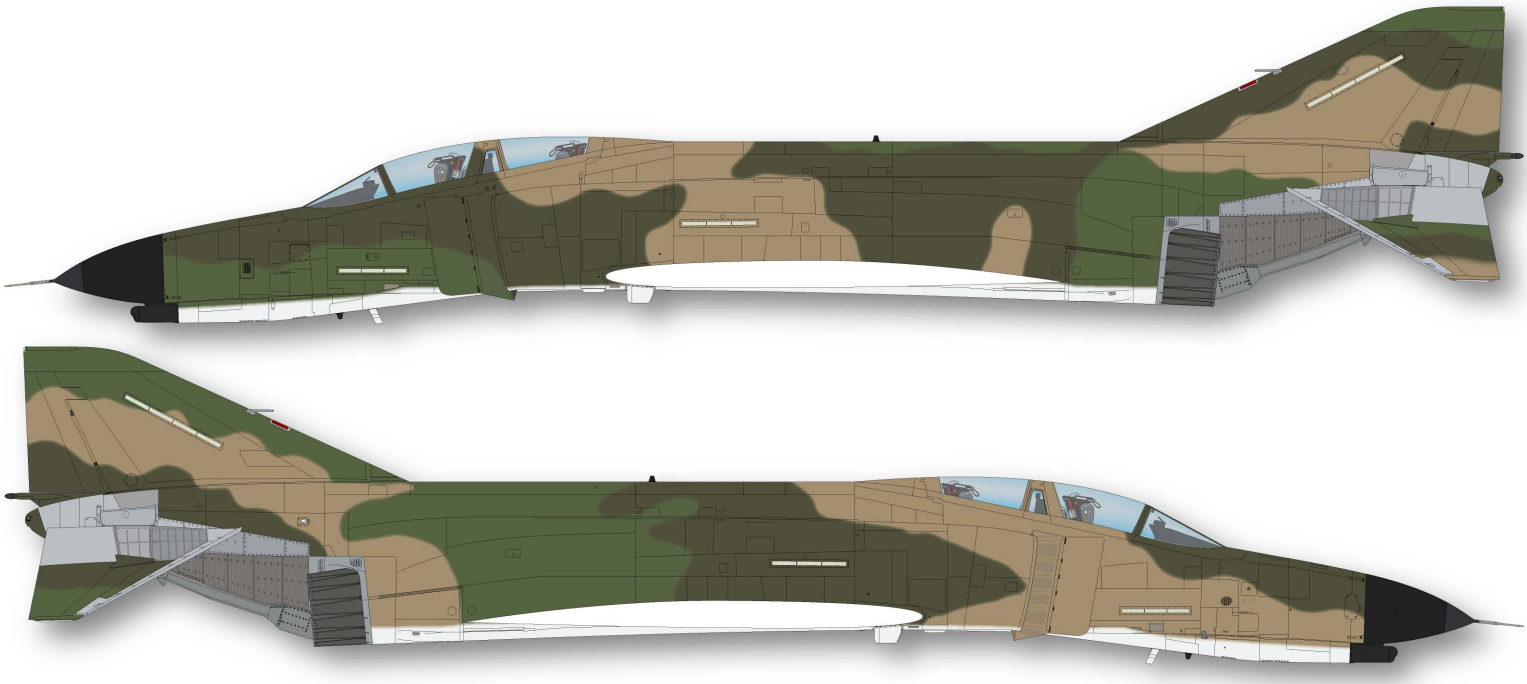
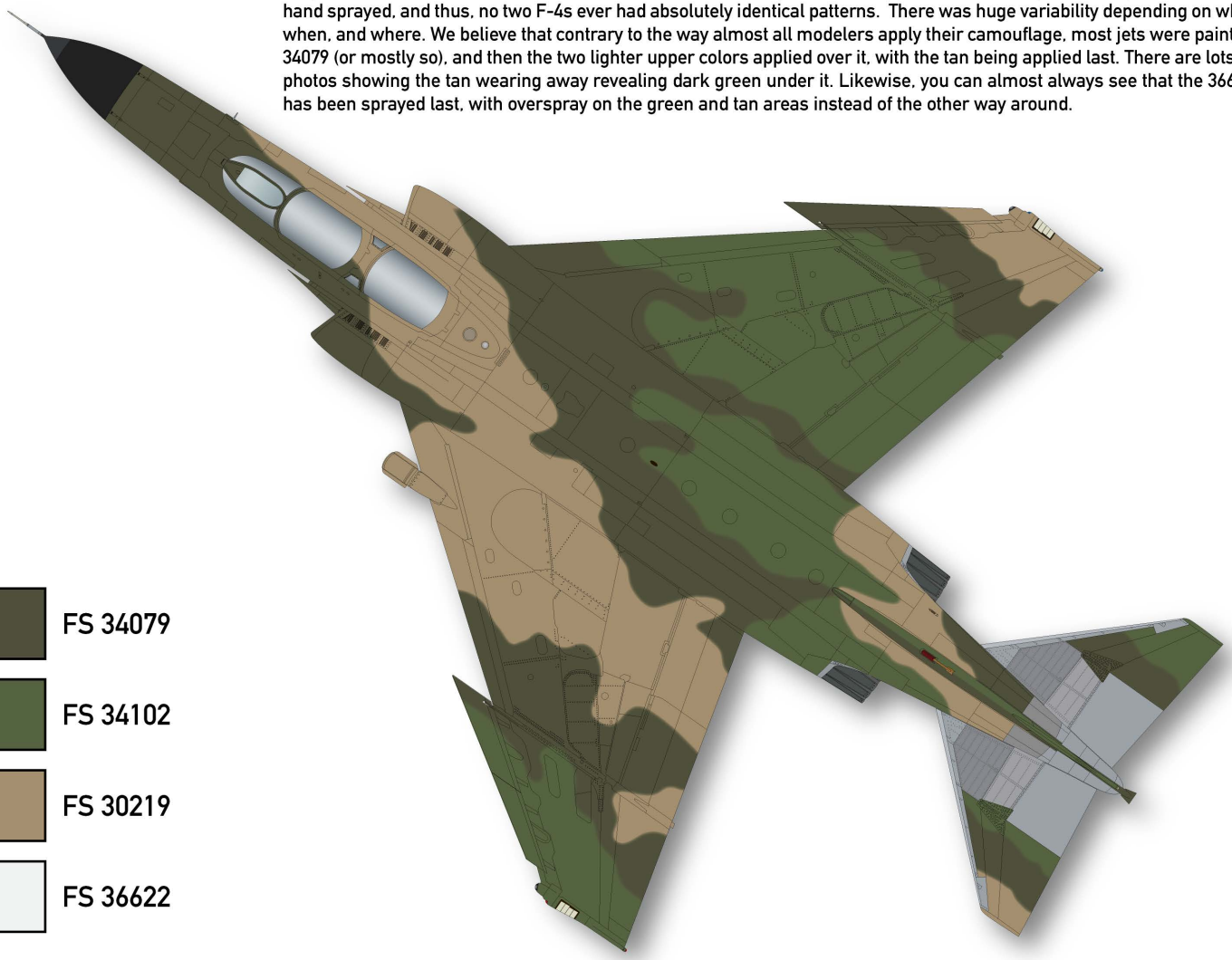
McDonnell Douglas F-4E/RF-4C/E

Southeast Asia Camouflage

T.O. 1-1-4 Standard Pattern



This is the standard Southeast Asia camouflage pattern introduced in 1965. It remained basically standard until the Hill Gray scheme was introduced in the mid-1980s. The camouflage, whether applied at the factory or at a depot, was always hand sprayed, and thus, no two F-4s ever had absolutely identical patterns. There was huge variability depending on who, when, and where. We believe that contrary to the way almost all modelers apply their camouflage, most jets were painted 34079 (or mostly so), and then the two lighter upper colors applied over it, with the tan being applied last. There are lots of photos showing the tan wearing away revealing dark green under it. Likewise, you can almost always see that the 36622 has been sprayed last, with overspray on the green and tan areas instead of the other way around.



FS 34079

FS 34102

FS 30219

FS 36622

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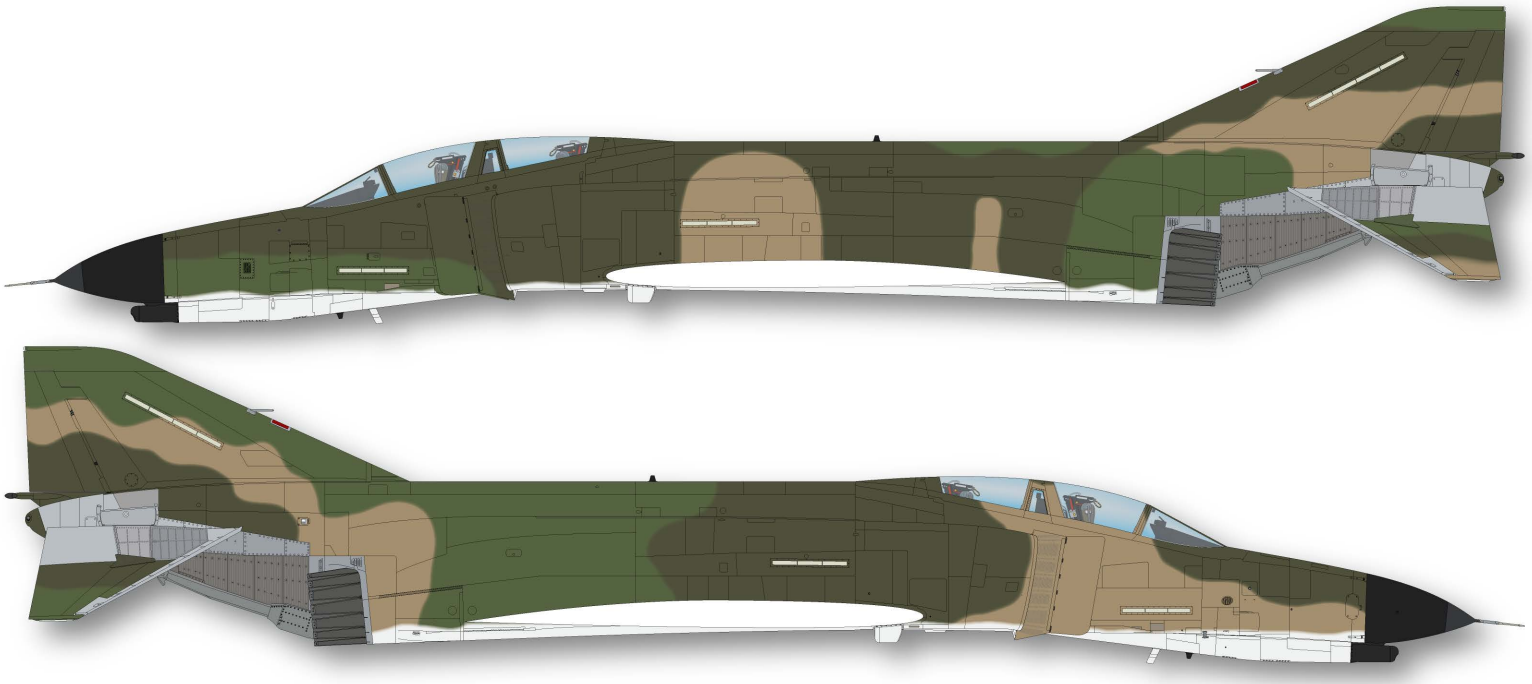
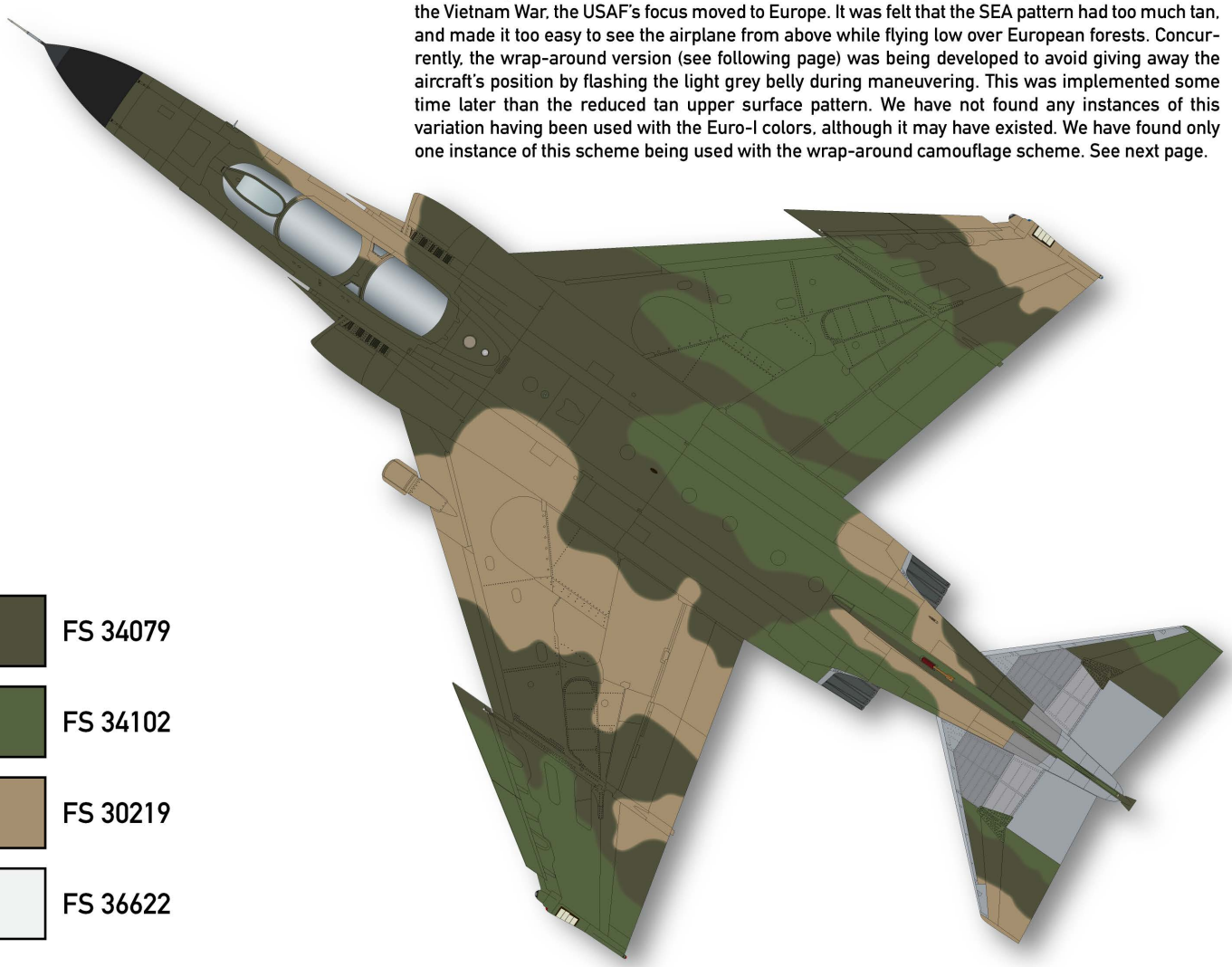
McDonnell Douglas F-4E/RF-4C/E

Southeast Asia Camouflage
Reduced FS 30219 Version Pattern



Starting in the late 1970s, this version of the standard T.O. 1-1-4 Southeast Asia Camouflage pattern was developed with a reduced amount of FS30219 tan on the upper forward fuselage. With the end of the Vietnam War, the USAF's focus moved to Europe. It was felt that the SEA pattern had too much tan, and made it too easy to see the airplane from above while flying low over European forests. Concurrently, the wrap-around version (see following page) was being developed to avoid giving away the aircraft's position by flashing the light grey belly during maneuvering. This was implemented some time later than the reduced tan upper surface pattern. We have not found any instances of this variation having been used with the Euro-I colors, although it may have existed. We have found only one instance of this scheme being used with the wrap-around camouflage scheme. See next page.



FS 34079

FS 34102

FS 30219

FS 36622

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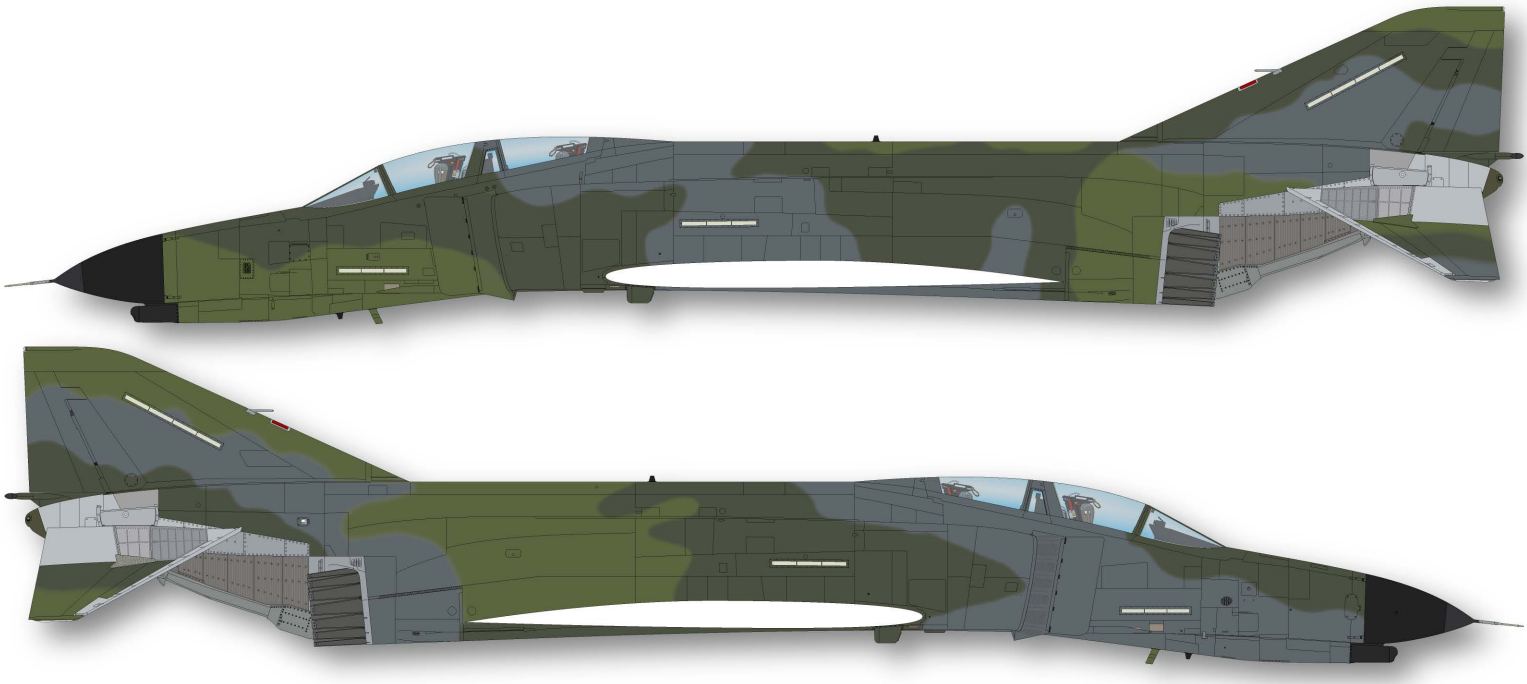
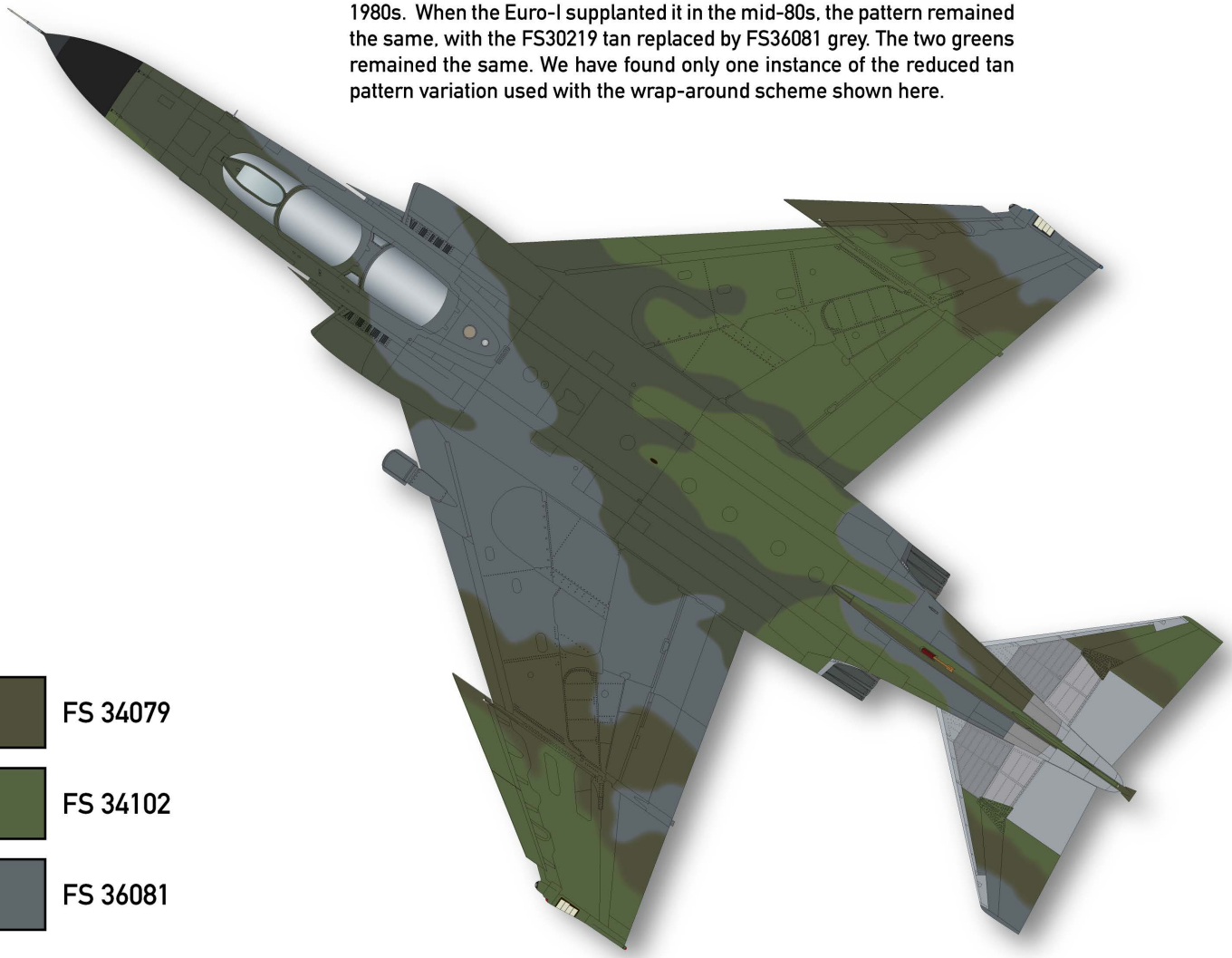
McDonnell Douglas F-4E/RF-4C/E

Southeast Asia/Euro-I Camouflage Wrap-around Pattern



The wrap-around version of SEA camouflage was introduced in the early 1980s. When the Euro-I supplanted it in the mid-80s, the pattern remained the same, with the FS30219 tan replaced by FS36081 grey. The two greens remained the same. We have found only one instance of the reduced tan pattern variation used with the wrap-around scheme shown here.



FS 34079

FS 34102

FS 36081

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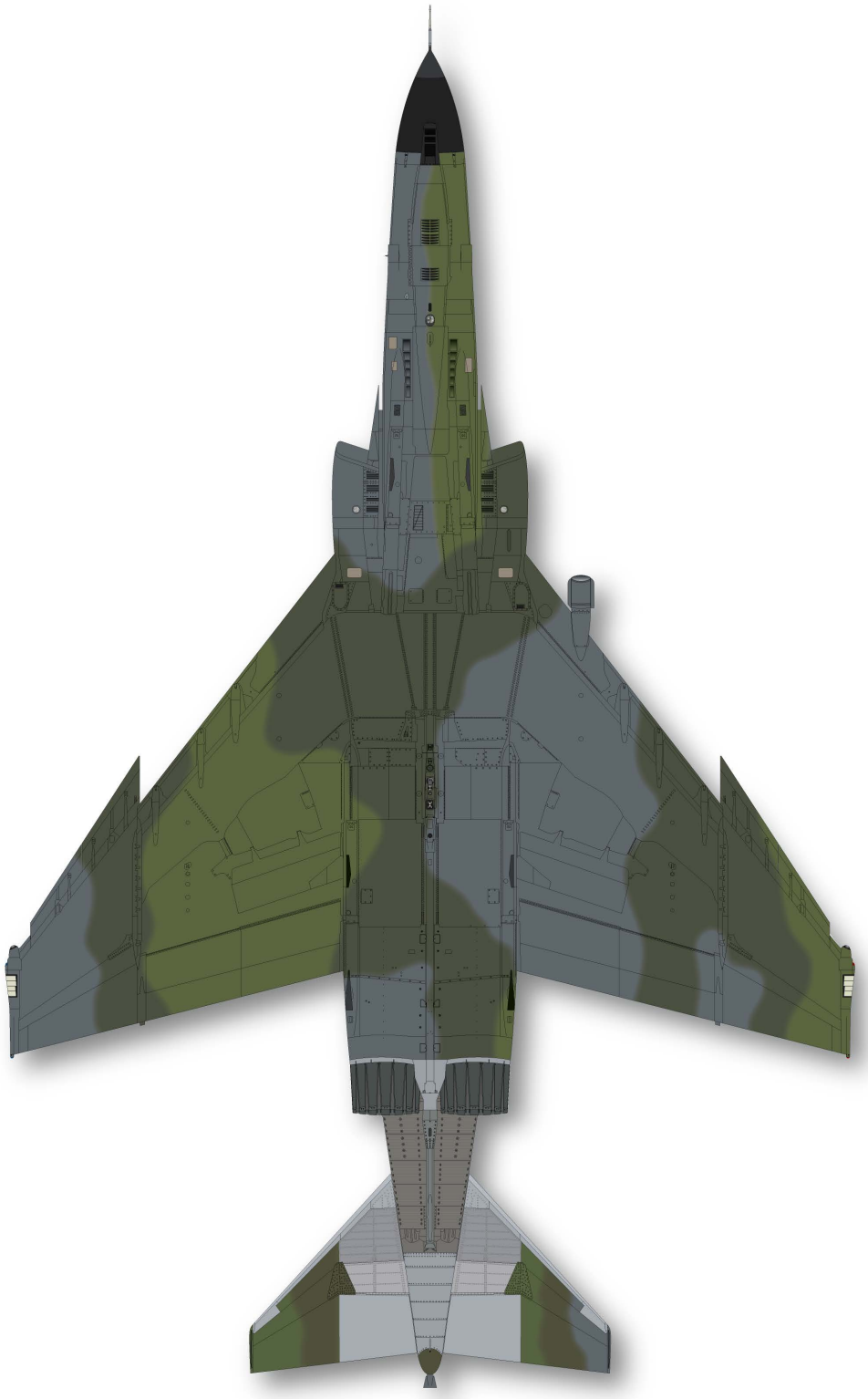
McDonnell Douglas F-4E/RF-4C/E

Southeast Asia/Euro-I Camouflage
Wrap-around Pattern



FS 34079

FS 34102

FS 36081

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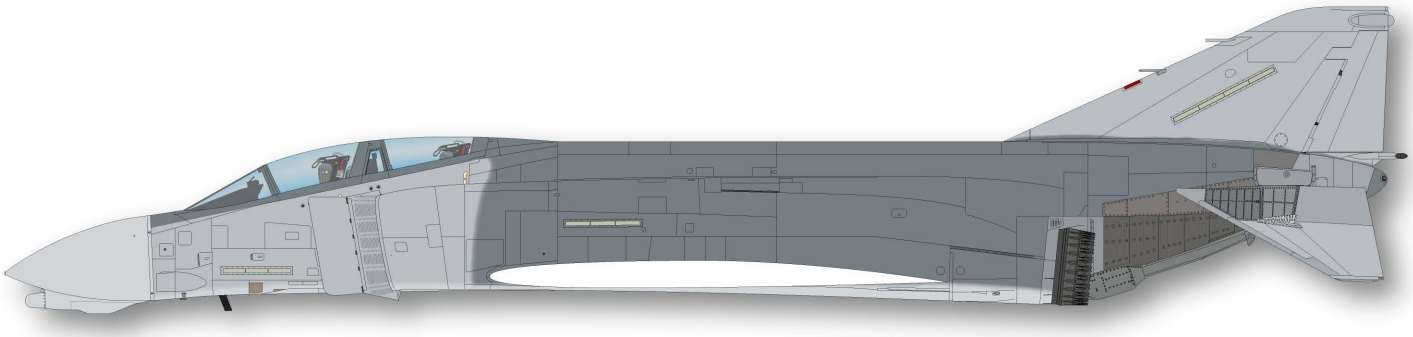
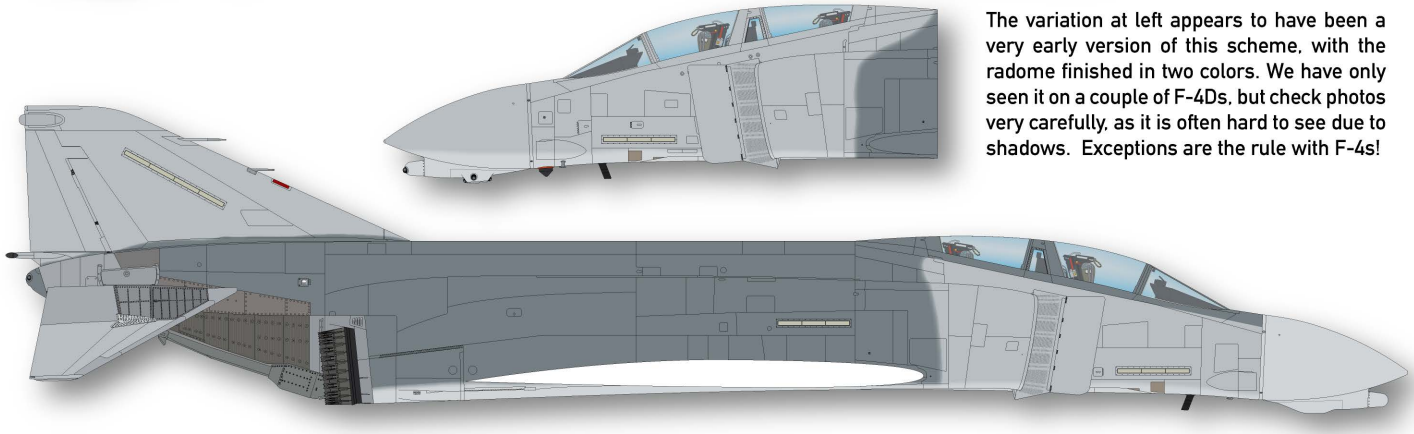
McDonnell Douglas F-4C/D/E/RF-4C

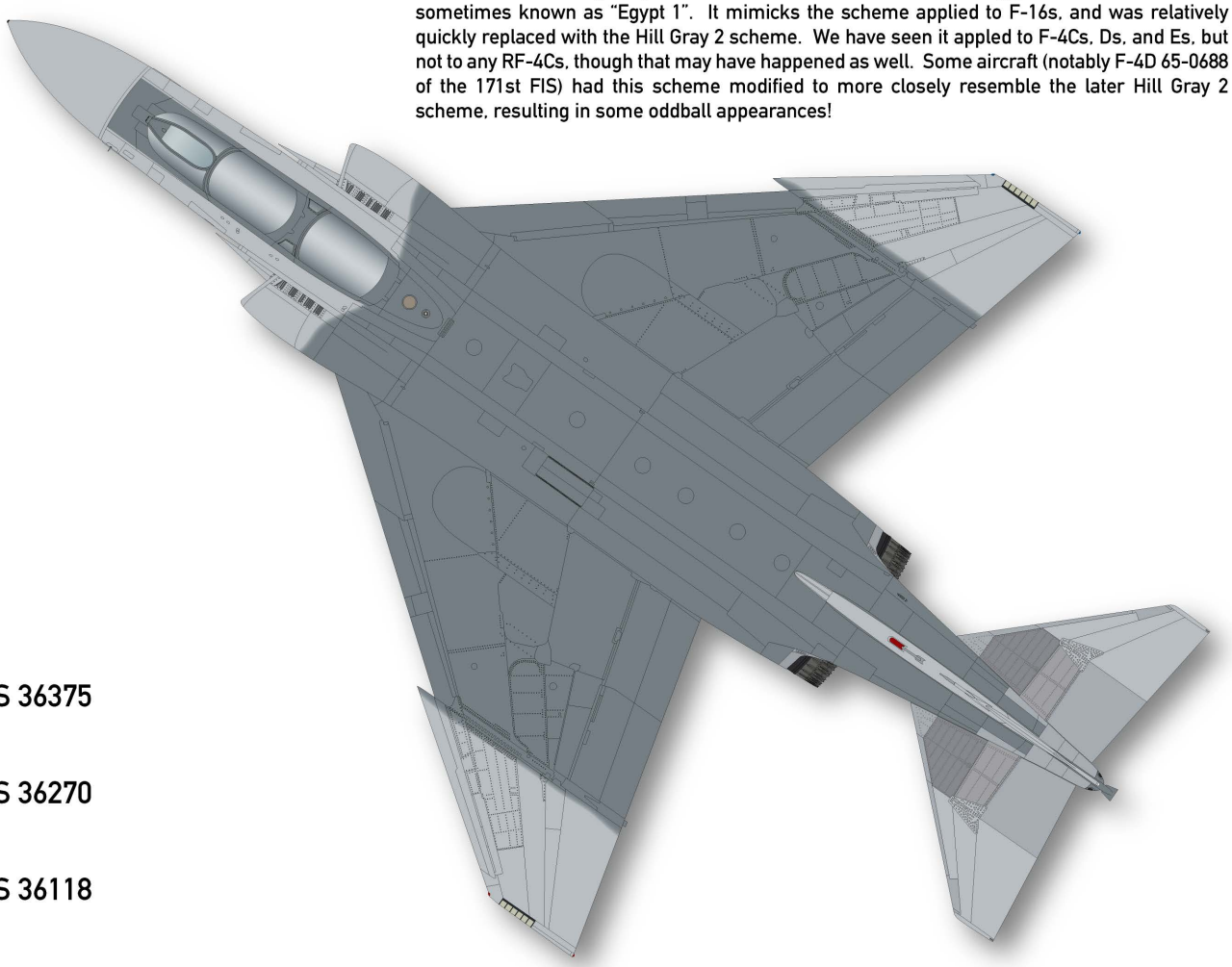
Hill Gray 1 Camouflage





The variation at left appears to have been a very early version of this scheme, with the radome finished in two colors. We have only seen it on a couple of F-4Ds, but check photos very carefully, as it is often hard to see due to shadows. Exceptions are the rule with F-4s!

This scheme was originally seen on F-4Es refurbished for sale to Egypt in around 1981, and is sometimes known as "Egypt 1". It mimicks the scheme applied to F-16s, and was relatively quickly replaced with the Hill Gray 2 scheme. We have seen it appled to F-4Cs, Ds, and Es, but not to any RF-4Cs, though that may have happened as well. Some aircraft (notably F-4D 65-0688 of the 171st FIS) had this scheme modified to more closely resemble the later Hill Gray 2 scheme, resulting in some oddball appearances!



FS 36375

FS 36270

FS 36118

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McDonnell Douglas F-4C/D/E/RF-4C

Hill Gray 1 Camouflage

We have provided two color variations for the light grey national insignias on the Hill Gray schemes. Per the T.O. they were supposed to be the same light gray as the camouflage, but photos clearly show many aircraft with much lighter, almost off-white insignias on the fuselage.

FS 36375

FS 36270

FS 36118

Treatment of the inboard pylons and drop tanks and their pylons in this scheme mirrored the treatment they received in the Southeast Asia camouflage scheme, except that the FS 36118 area on the inboard pylon only extended back to the wing leading edge, and not underneath it.

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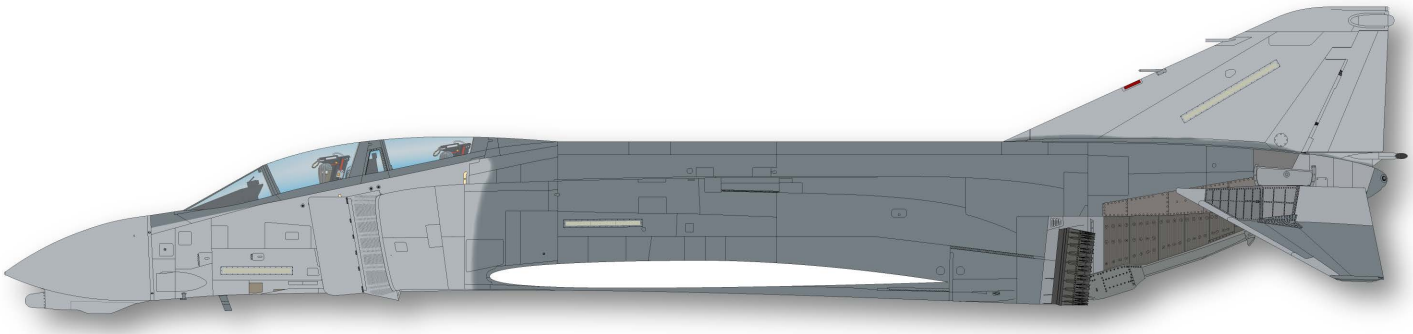
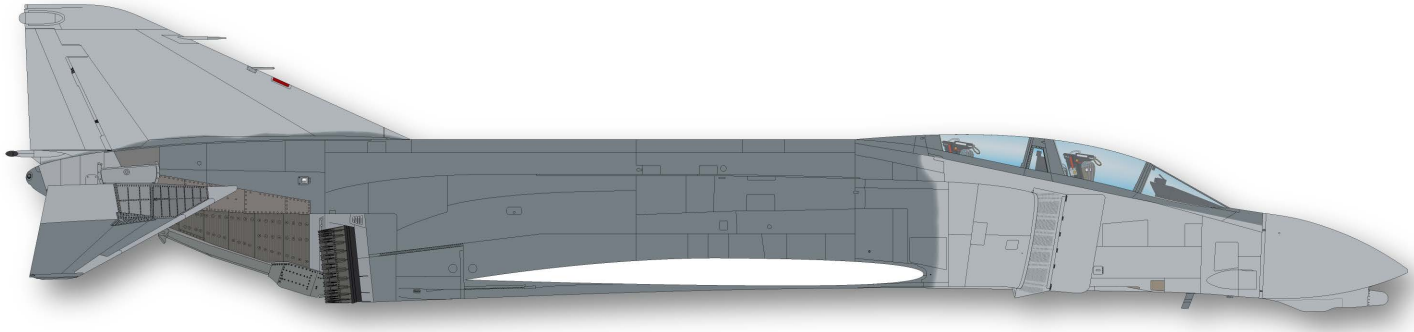
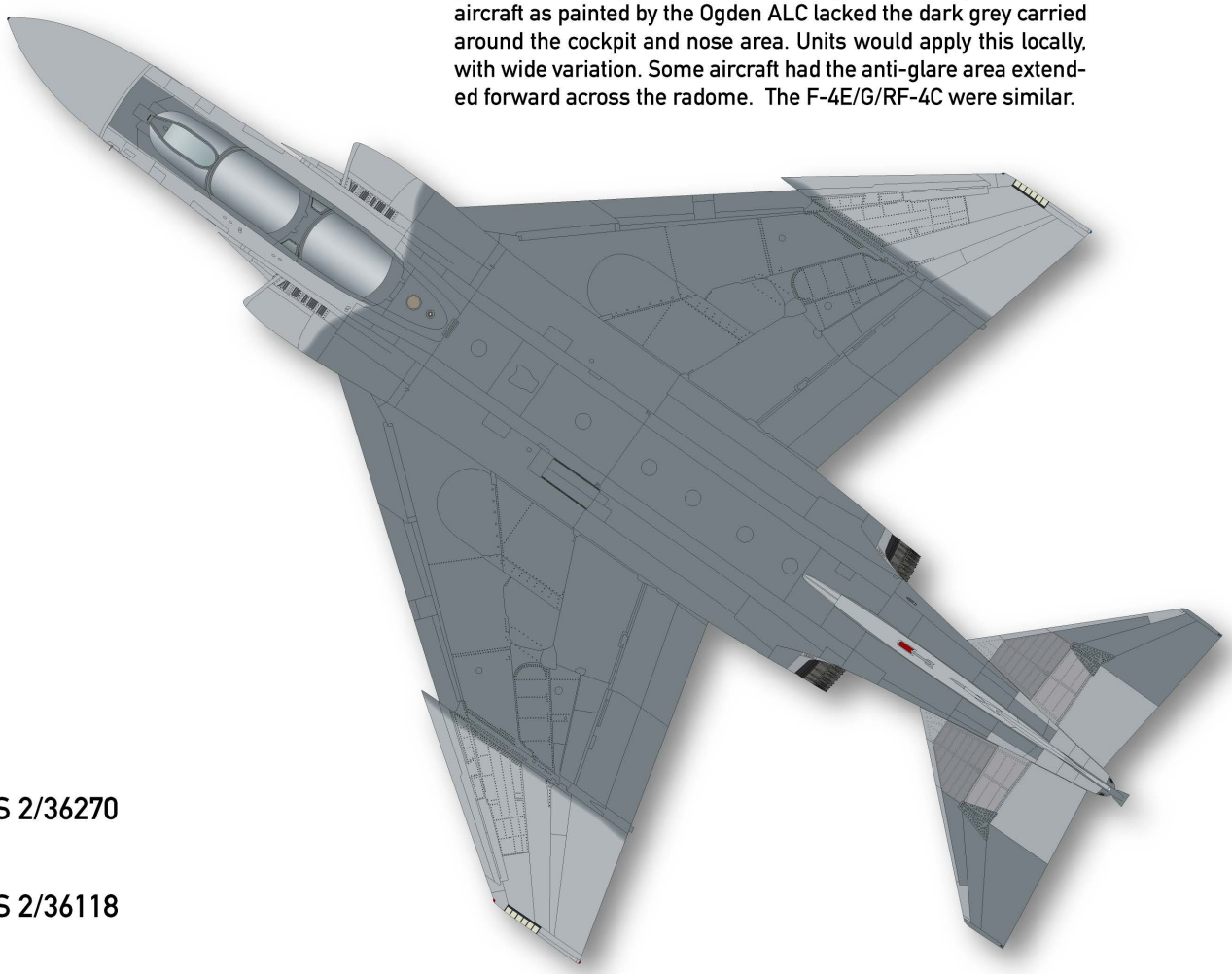
McDonnell Douglas F-4C/D/E/RF-4C

Hill Gray 2 Camouflage





This scheme orginally used flat (36xxx) paints, but crew chiefs hated it becase the matte paint got very dirty very quickly. They petitioned the depot to switch to semi-gloss (26xxx) paints. Many aircraft as painted by the Ogden ALC lacked the dark grey carried around the cockpit and nose area. Units would apply this locally, with wide variation. Some aircraft had the anti-glare area extended forward across the radome. The F-4E/G/RF-4C were similar.



FS 2/36270

FS 2/36118

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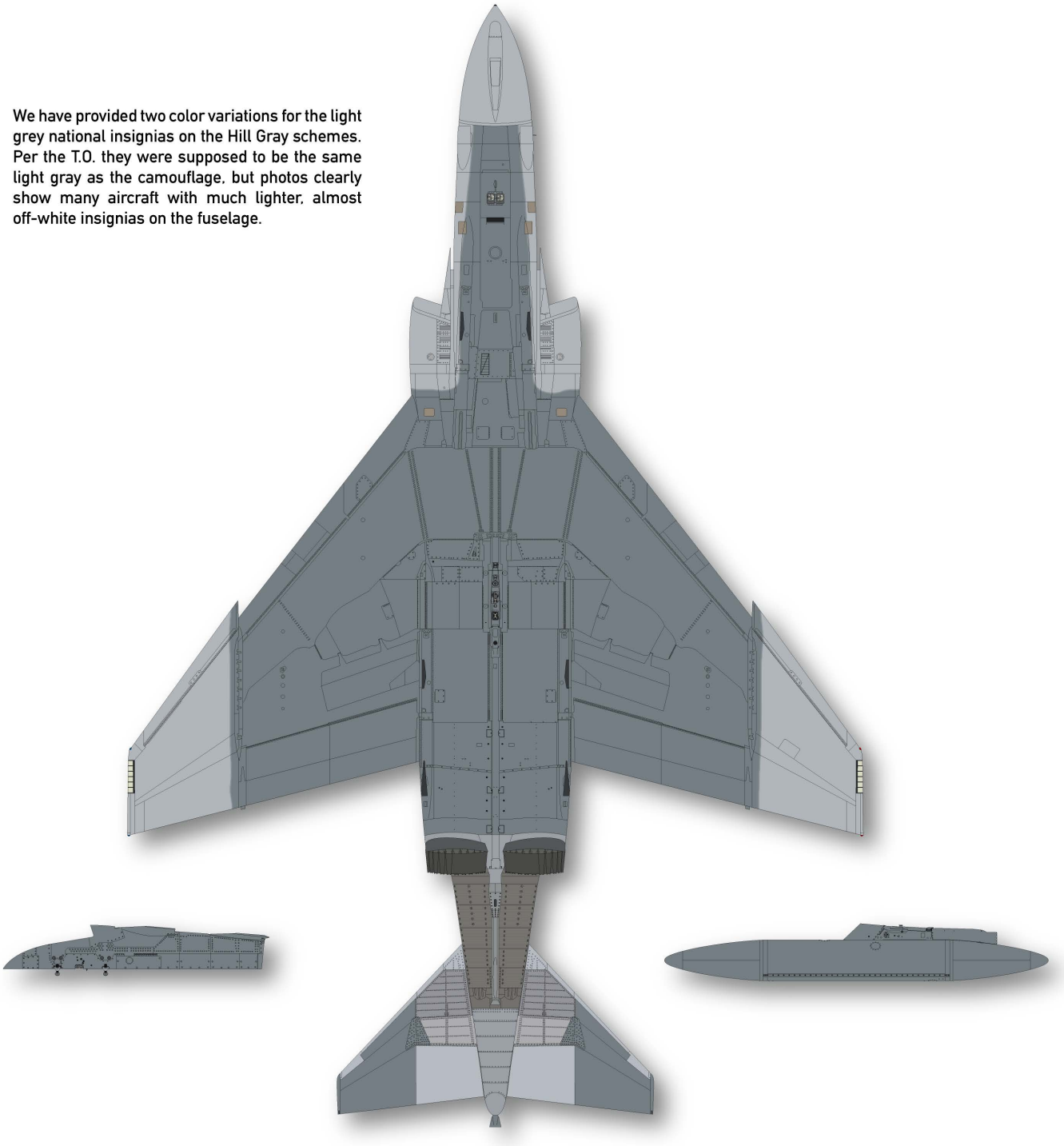
McDonnell Douglas F-4C/D/E/RF-4C

Hill Gray 2 Camouflage

We have provided two color variations for the light grey national insignias on the Hill Gray schemes. Per the T.O. they were supposed to be the same light gray as the camouflage, but photos clearly show many aircraft with much lighter, almost off-white insignias on the fuselage.



Inboard pylons and the drop tanks and pylons were finished in overall FS2/36118.

FS 2/36270

FS 2/36118

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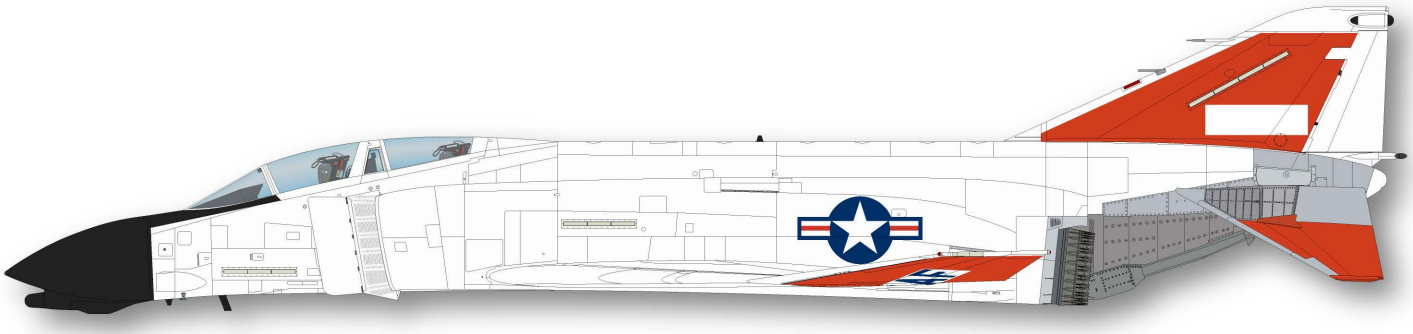
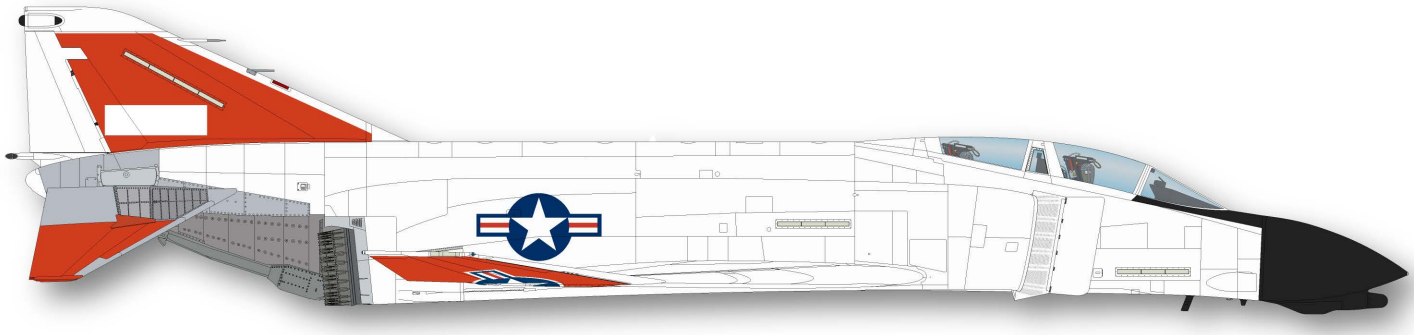
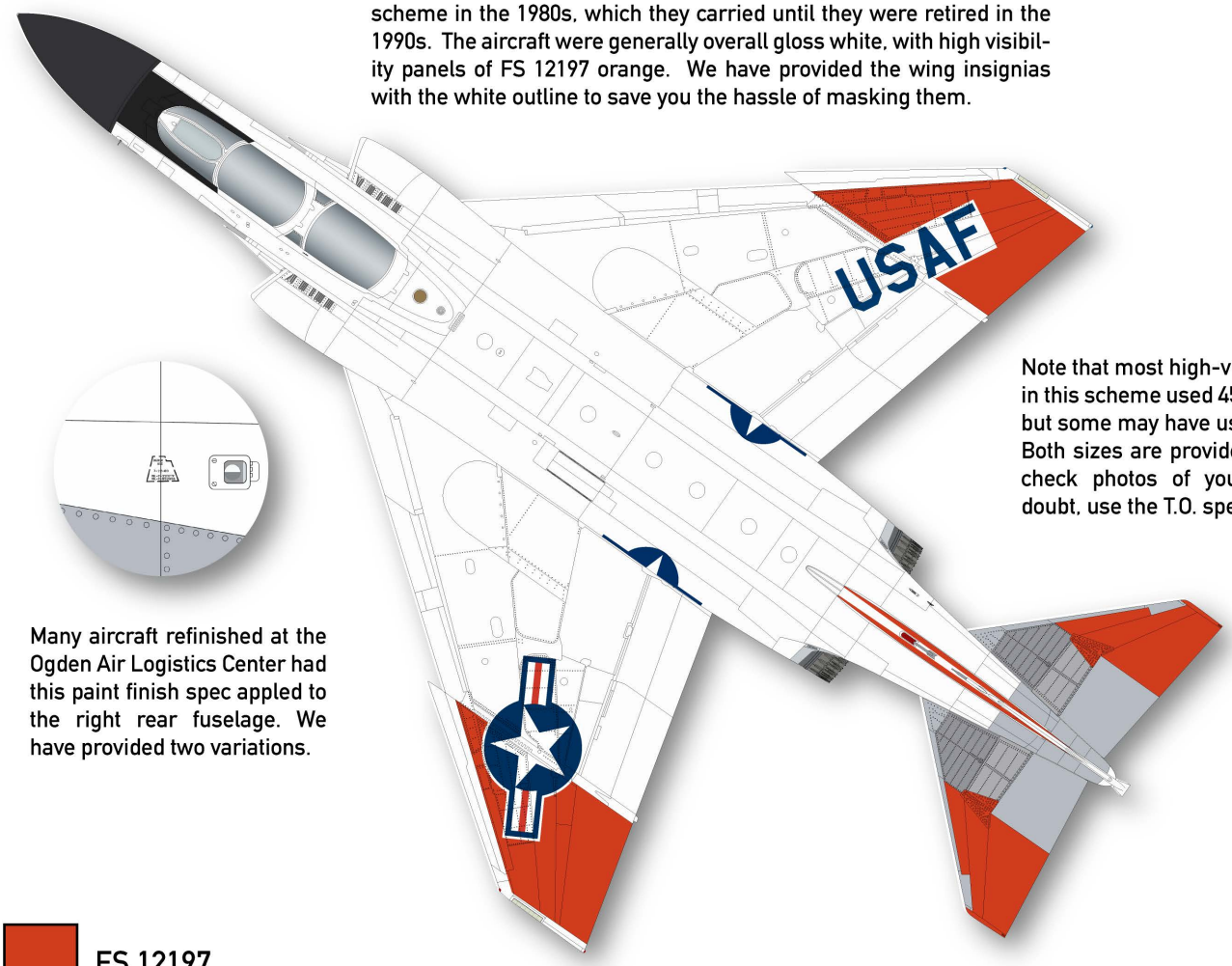
McDonnell Douglas NF-4C/D/E/RF-4C

Flight Test Colors





A number of NF-4C, D, E, and NRF-4Cs were painted in this attractive scheme in the 1980s, which they carried until they were retired in the 1990s. The aircraft were generally overall gloss white, with high visibility panels of FS 12197 orange. We have provided the wing insignias with the white outline to save you the hassle of masking them.



Many aircraft refinished at the Ogden Air Logistics Center had this paint finish spec appled to the right rear fuselage. We have provided two variations.

Note that most high-viz F-4s (including in this scheme used 45" wing insignias, but some may have used 35" insignias. Both sizes are provided, so be sure to check photos of your subject. If in doubt, use the T.O. specified 45" size.

FS 12197

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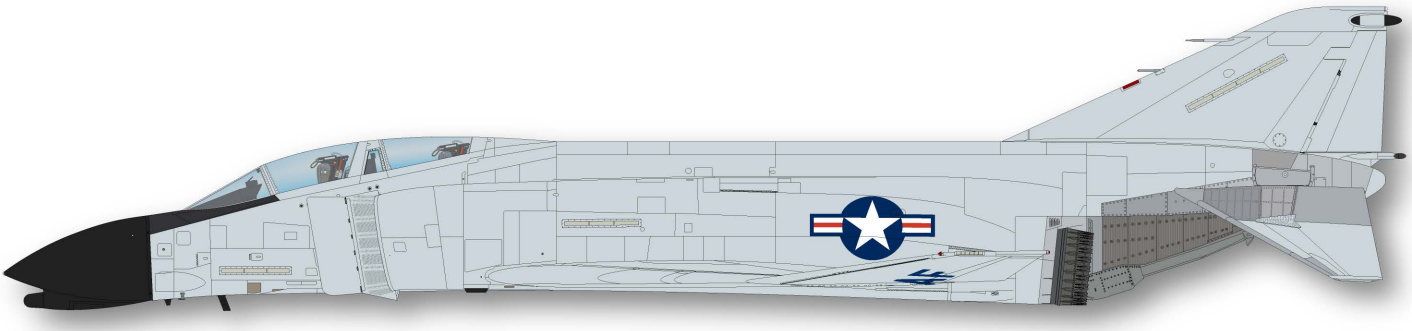
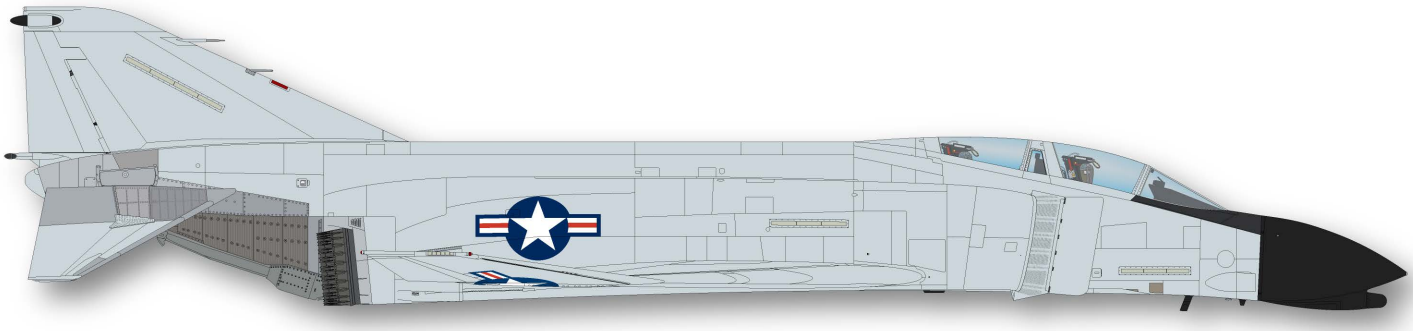
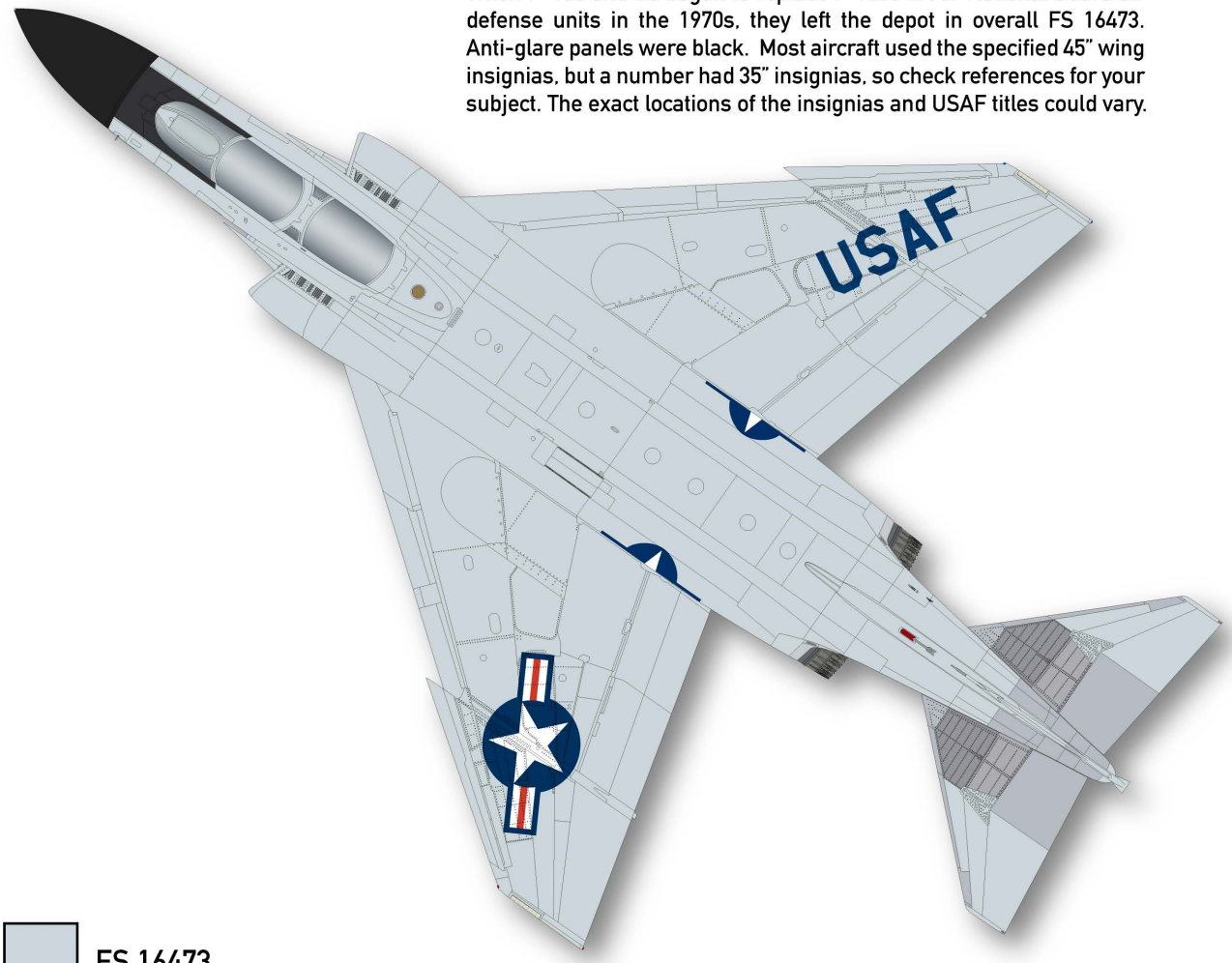
McDonnell Douglas F-4C/D

Air Defense Colors





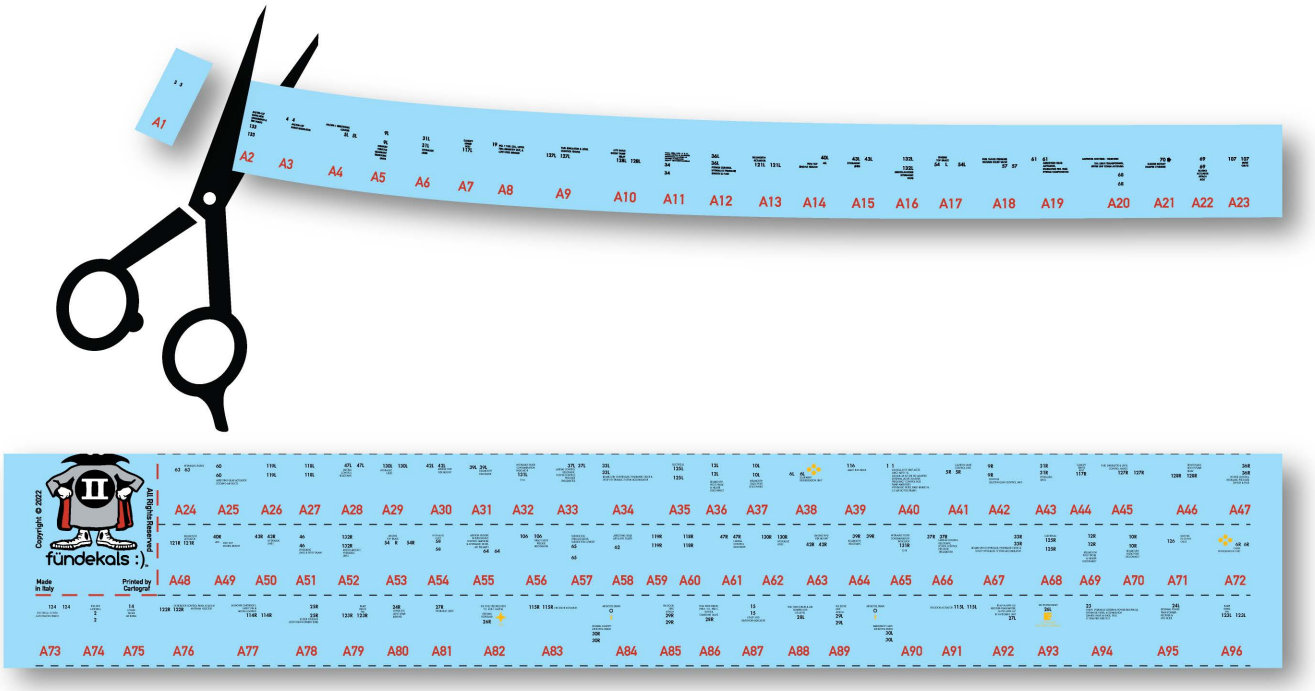
When F-4Cs and Ds began to replace F-106s in Air National Guard air defense units in the 1970s, they left the depot in overall FS 16473. Anti-glare panels were black. Most aircraft used the specified 45" wing insignias, but a number had 35" insignias, so check references for your subject. The exact locations of the insignias and USAF titles could vary.



FS 16473

From Chaos...Order!

Let's face it: this *might* not be a fun job. But take heart! We pondered over how to make it as painless as possible. Part of that is organizing the instructions in a logical order and in small pieces. But then it came to the actual decal. So here's what we came up with. When you have decided on what variant(s) of the Phantom you will be building, locate that section of the instruction sheet. We recommend printing those pages out so you can check off individual items as you apply them. When you're ready, cut off one strip of sequentially numbered decals as shown below. Then remove one (and only one!) decal at a time, apply it, and mark it off the instructions as you go. Continue to the end of the strip, stop, have a glass or two of your favorite libation, then cut and apply another strip. Slow and steady wins the race, and before long your Phantom will be stenciled!



At the end of the section showing each specific aircraft type we have included composite views of each section of the aircraft. This should clear up any confusion about exactly where each decal should go with reference to the panel lines and the other decals around it. The belly of the F-4C/D/E and RF-4C/E are essentially identical except for the lack of Sparrow wells on the reconnaissance aircraft. Likewise, the hard wing is identical on the all aircraft, so those are only shown once.

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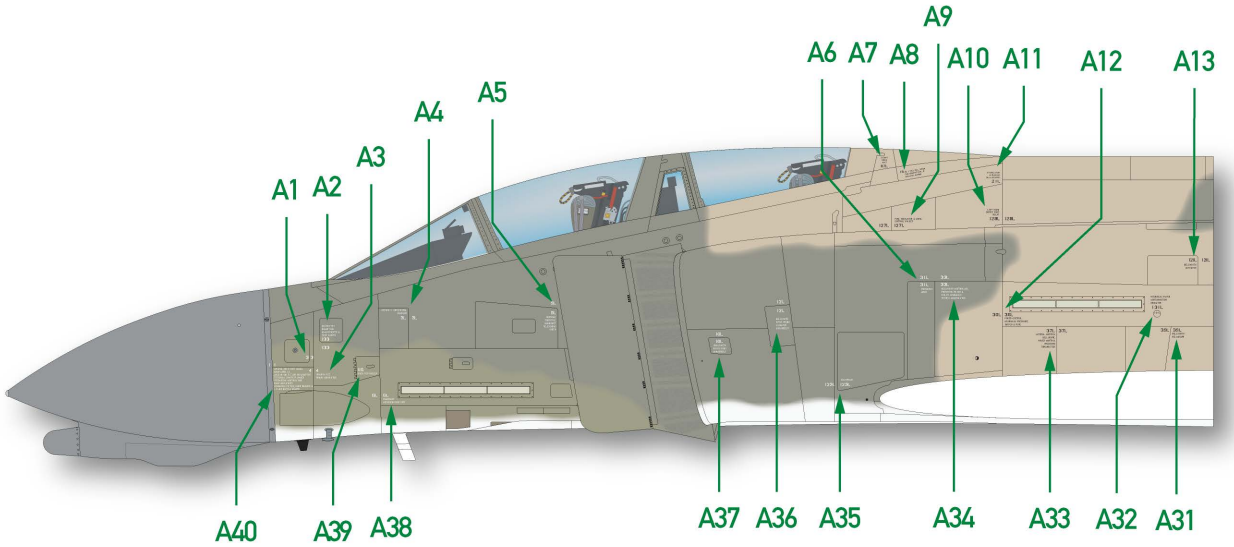
McDonnell Douglas F-4C/D
Access Door Markings
Left Hand Fuselage



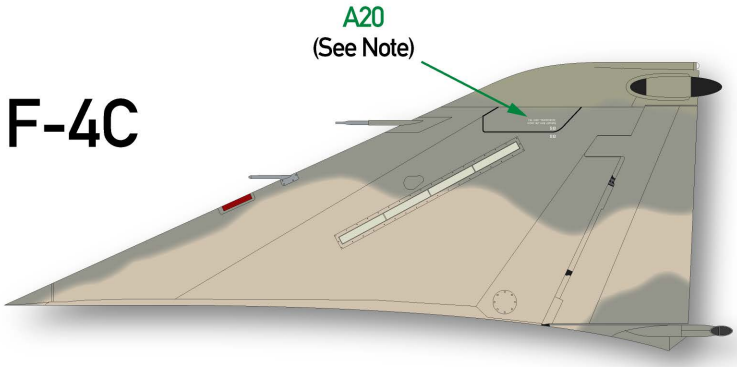
Notes:

A20/A189: As originally built, F-4Cs and early F-4Ds lacked any RHAW gear. Both types had Door 68 (decal A20) as shown at left. When AN/APS-107 RHAW gear was retrofitted to the F-4D from 1967, Door 68 was enlarged to accommodate the system's electronics, and became Door 621. The F-4C's AN/APR-25 system did not require this larger door, so all F-4Cs kept the original Door 68. These are shown with a heavier line for emphasis.

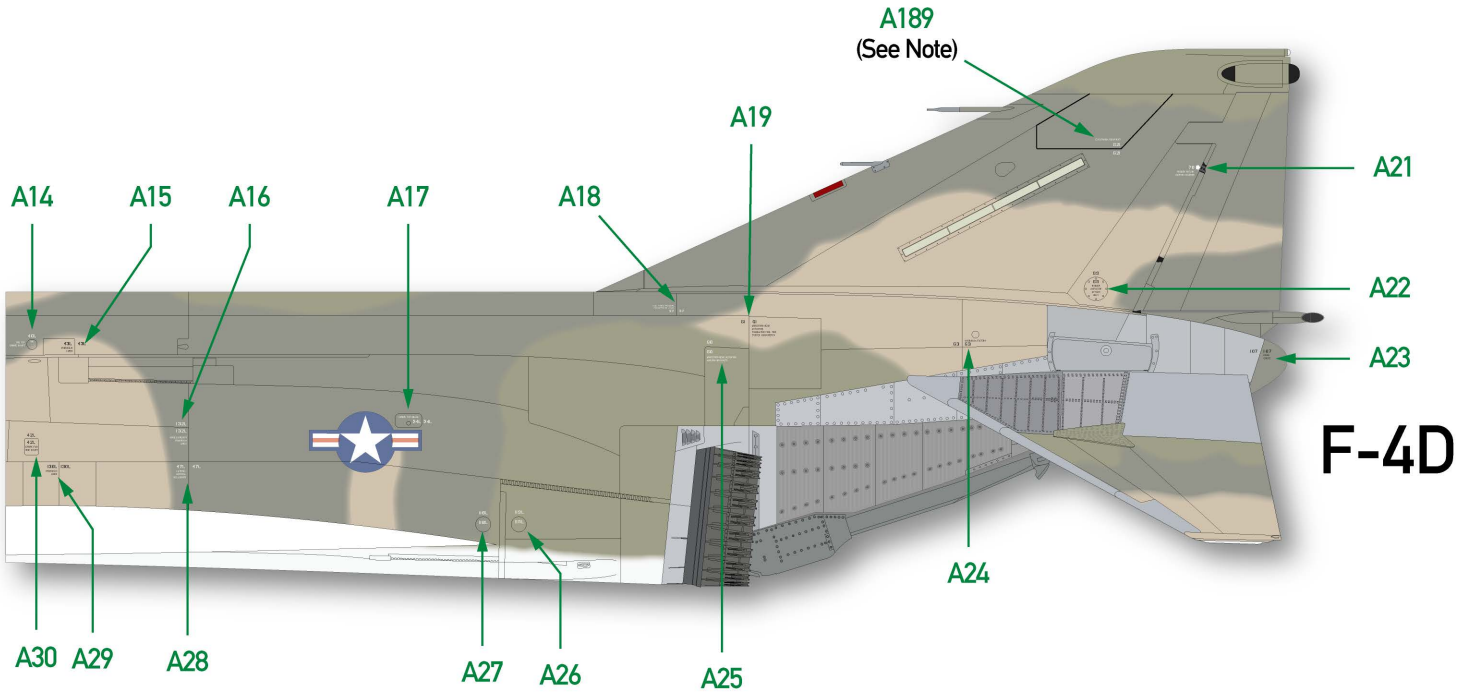
Even more interesting is what this did to the location of the formation lights added some years later. On the F-4C (as shown at left) the formation light was mounted higher and at a steeper angle. On the F-4D it was lower and at a shallower angle to clear the edge of Door 621 - but only on the left hand side! On the right side, the F-4C and F-4D formation light were in the same, higher, location. See next page. As always, be sure to get as many photos of your subject as possible. Exceptions are the rule with F-4s!

See notes at the end of the instructions regarding the arrowhead shaped doubler plates on the horizontal stabs. The time period of your subject will dictate which of these, if any, are appropriate.

F-4C



F-4D



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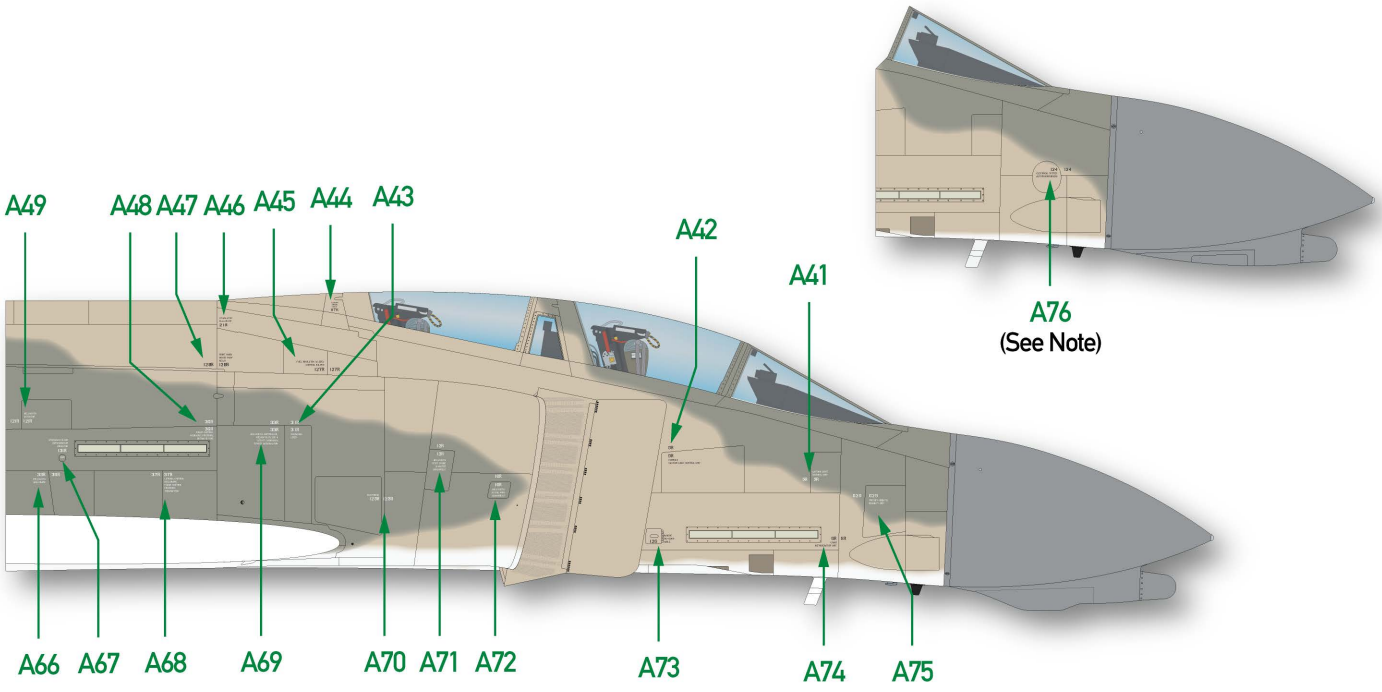
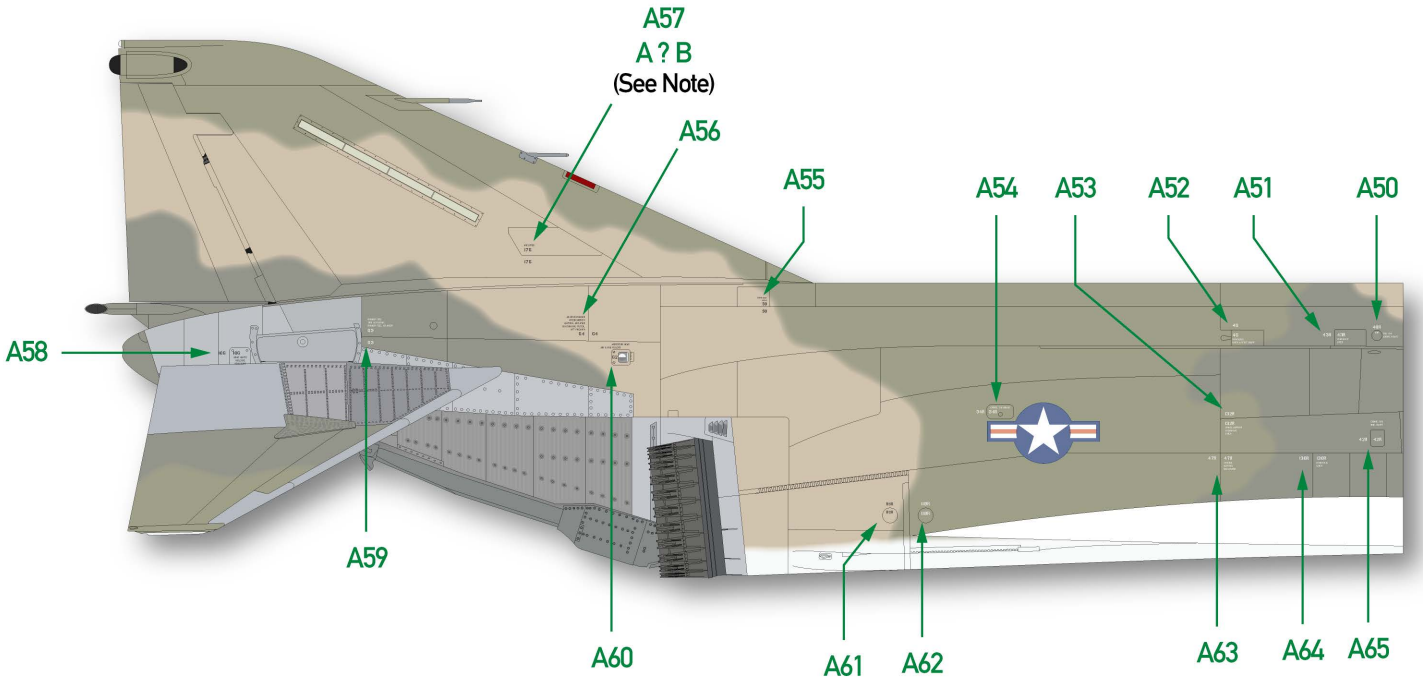
McDonnell Douglas F-4C/D
Access Door Markings
Right Hand Fuselage





Notes:

A57A/B: F-4Cs and early production F-4Ds lacked this acess door. It was added when RHAW equipment was retrofitted (AN/APR-25 on the F-4C and AN/APS-107 on the F-4D), and it was designated Door 609 (decal A57B). Later production F-4Ds had this access door from the factory, designated Door 176 (decal A57A).

A76: The round Access Door 129 (decal A76) was seen on all F-4Cs and many F-4Ds. When the KY-28 secure voice encryption system was installed, the trapezoidal Access Door 629 (decal A75) was installed. Some aircraft were updated, but the earlier round panel was still seen until some aircraft were retired in the 1990s.

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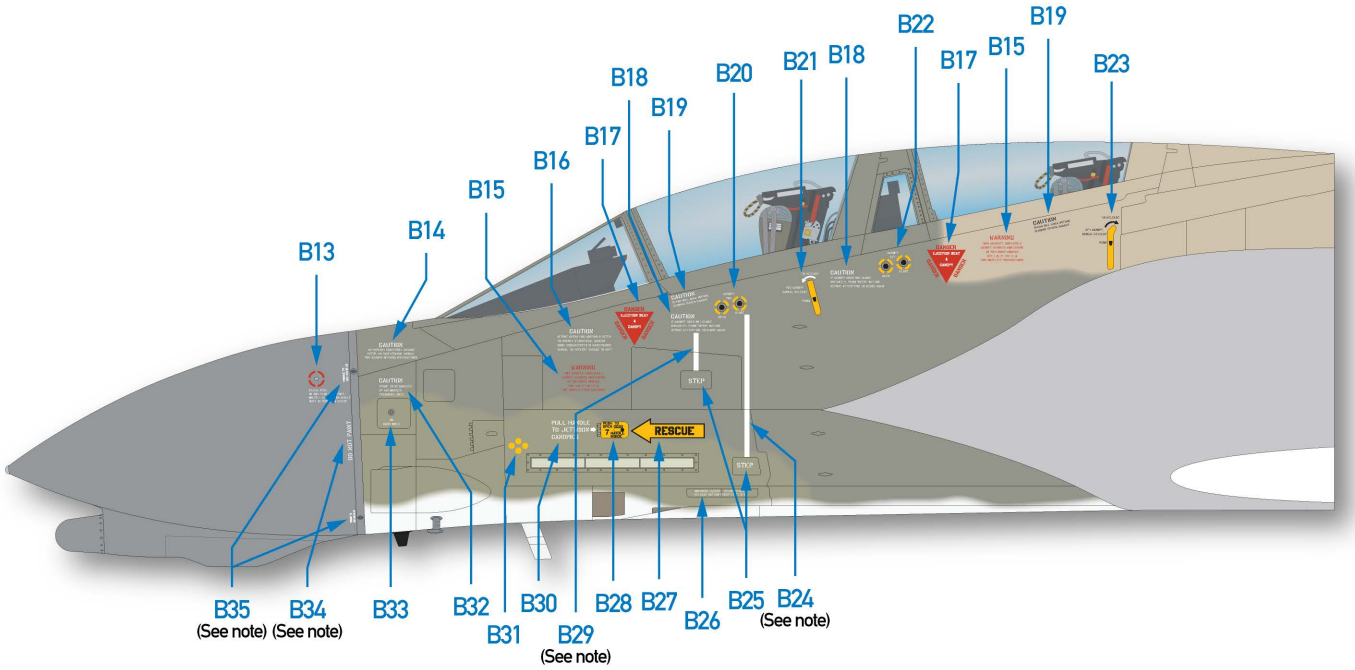
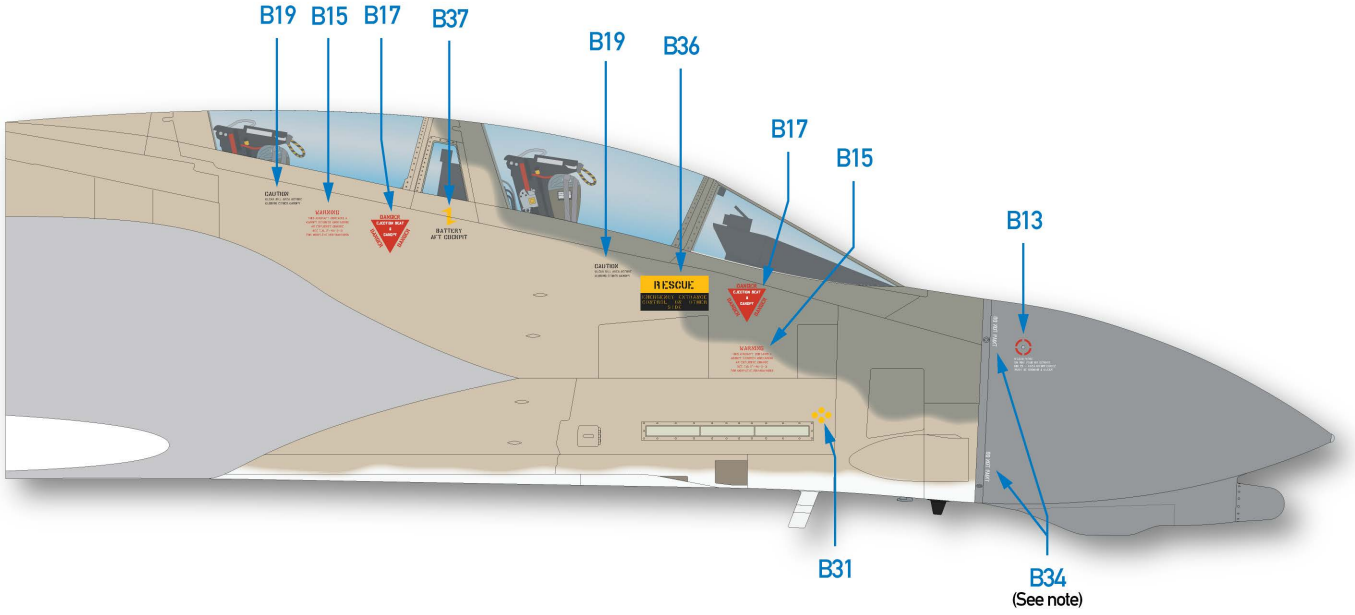
McDonnell Douglas F-4C/D
Instructional Markings
Forward Fuselage





Notes:

B44/29: The kick step guide stripes were applied in all manner of different configurations. We have provided enough stripe to allow you to do any version you might come across. Trim stripes as needed for your subject.

B34/35: These items could be seen together, seprarately, or not at all, and when applied were not always symmetrical. Apply as appropriate for your subject.

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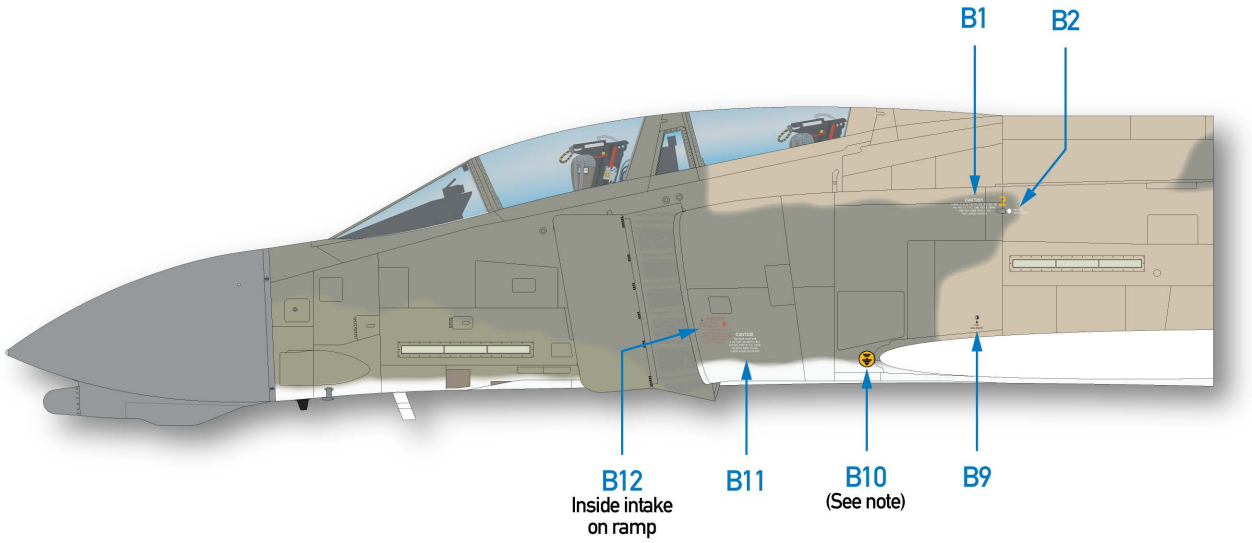
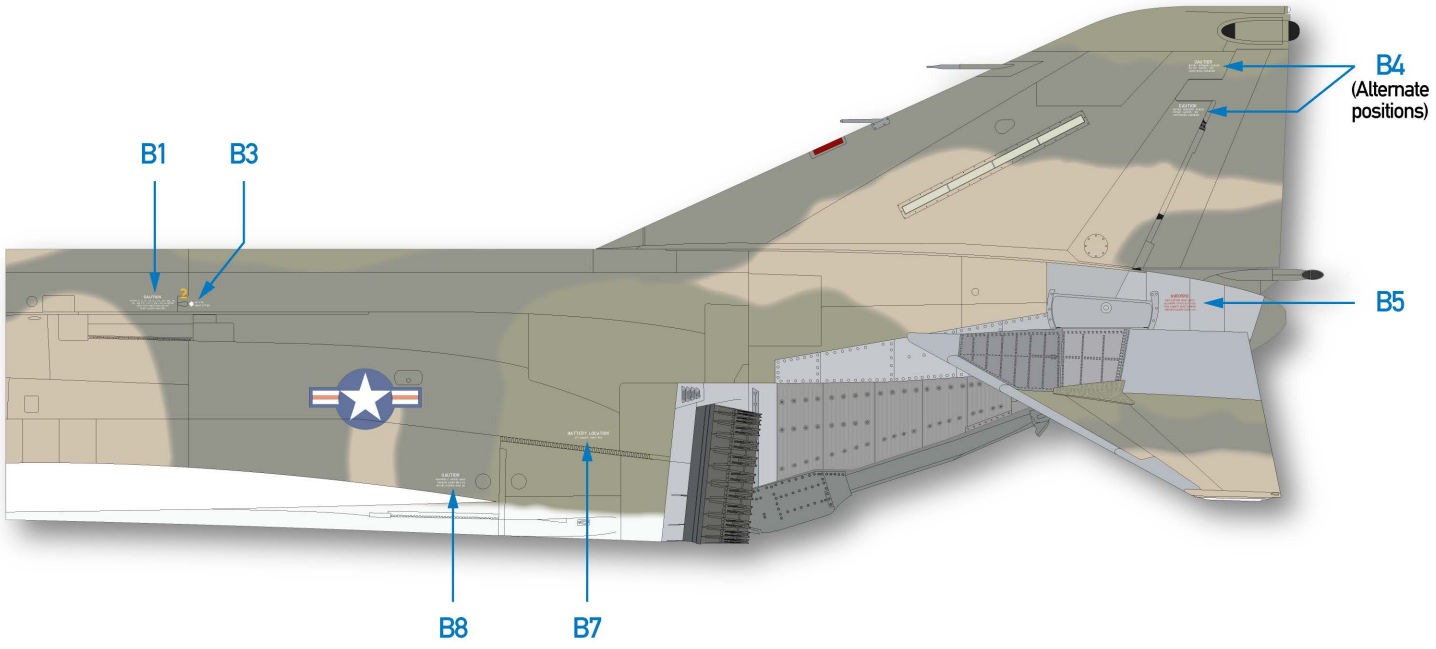
McDonnell Douglas F-4C/D
Instructional Markings
Left Hand Fuselage

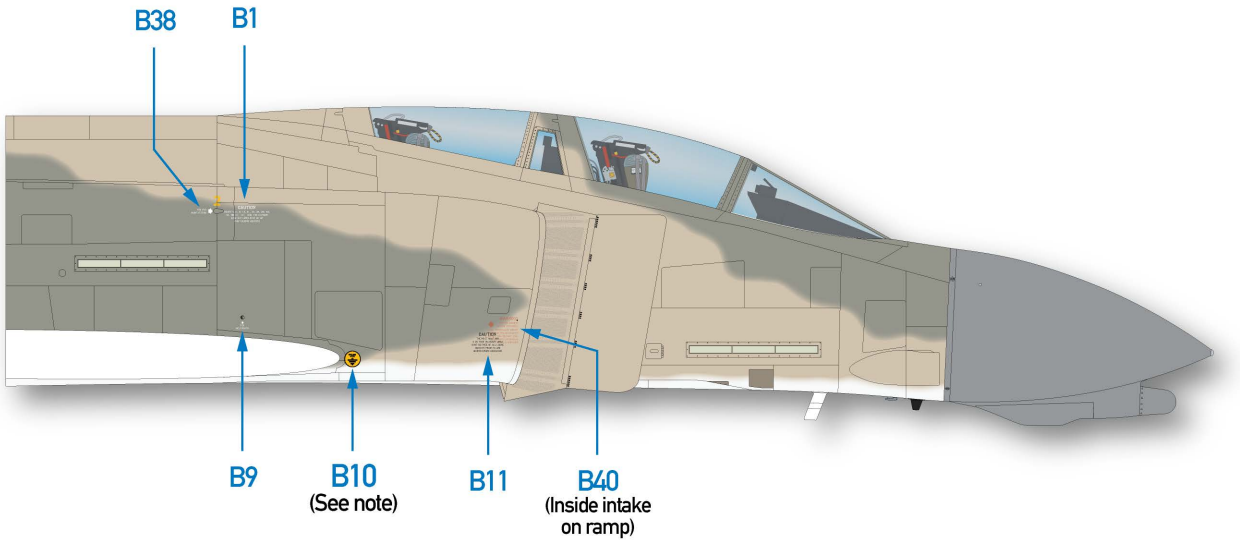


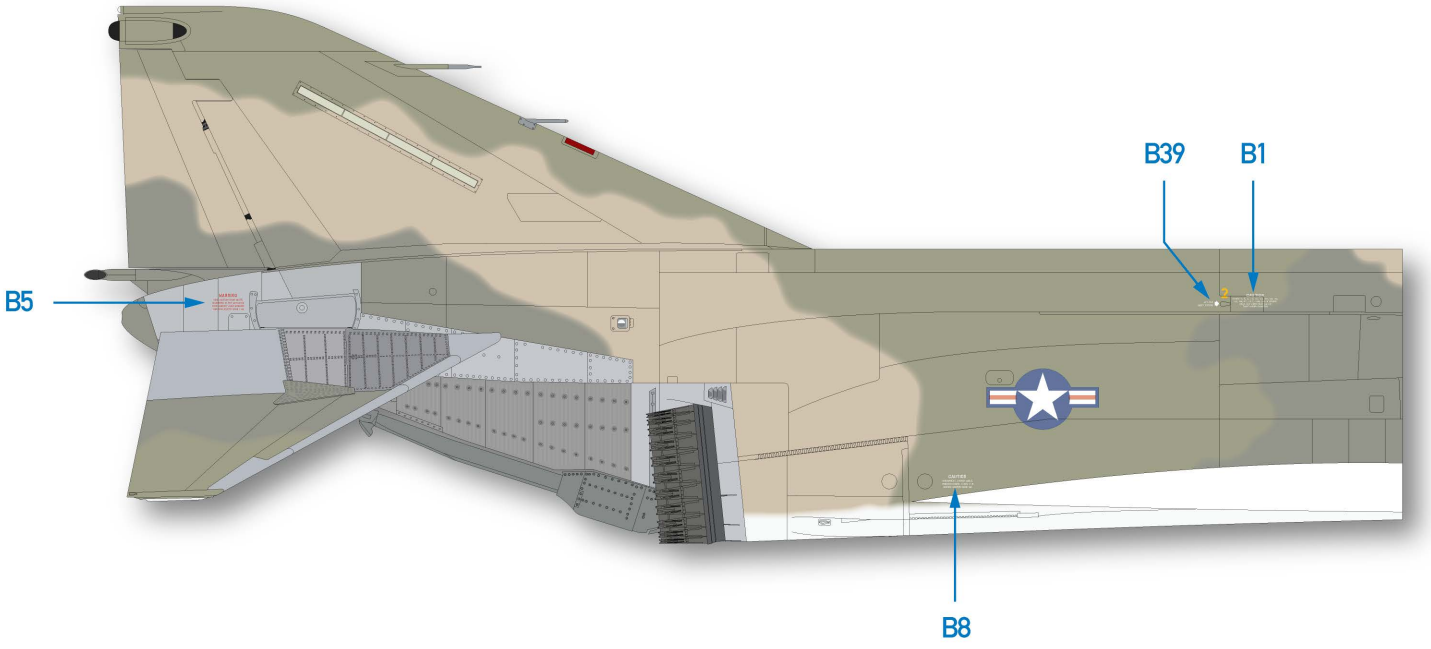


Notes:

B10: There was not originally a grounding plug on the left side in this location. It was added during PDM, but may not have been present on all aircraft. There were many variations in the style of this marking, and different styles could be mixed on the same airframe at any given time. Check photos of your subject.

McDonnell Douglas F-4C/D
Instructional Markings
Right Hand Fuselage





Note:

B10: There were many variations in the style of this marking, and different styles could be mixed on the same airframe at any given time. Choose from among the different variants provided for your subject.

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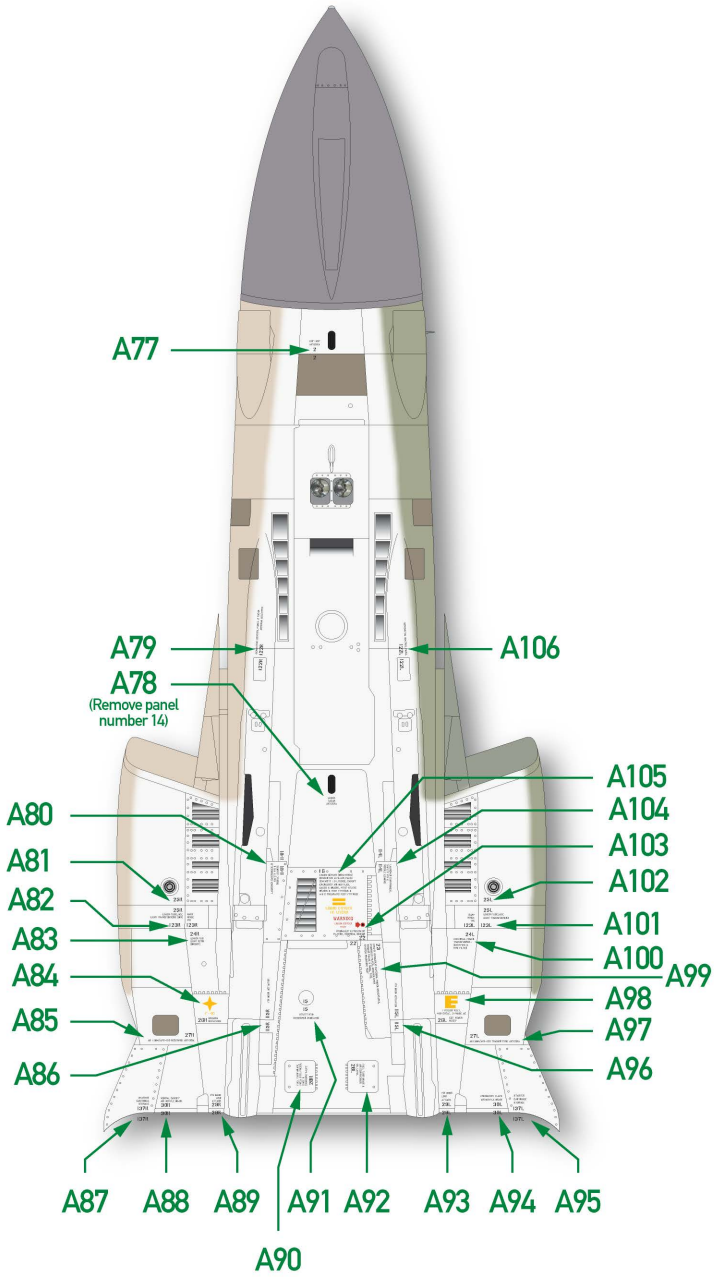
McDonnell Douglas F-4C/D

Access Door Markings

Lower Forward Fuselage



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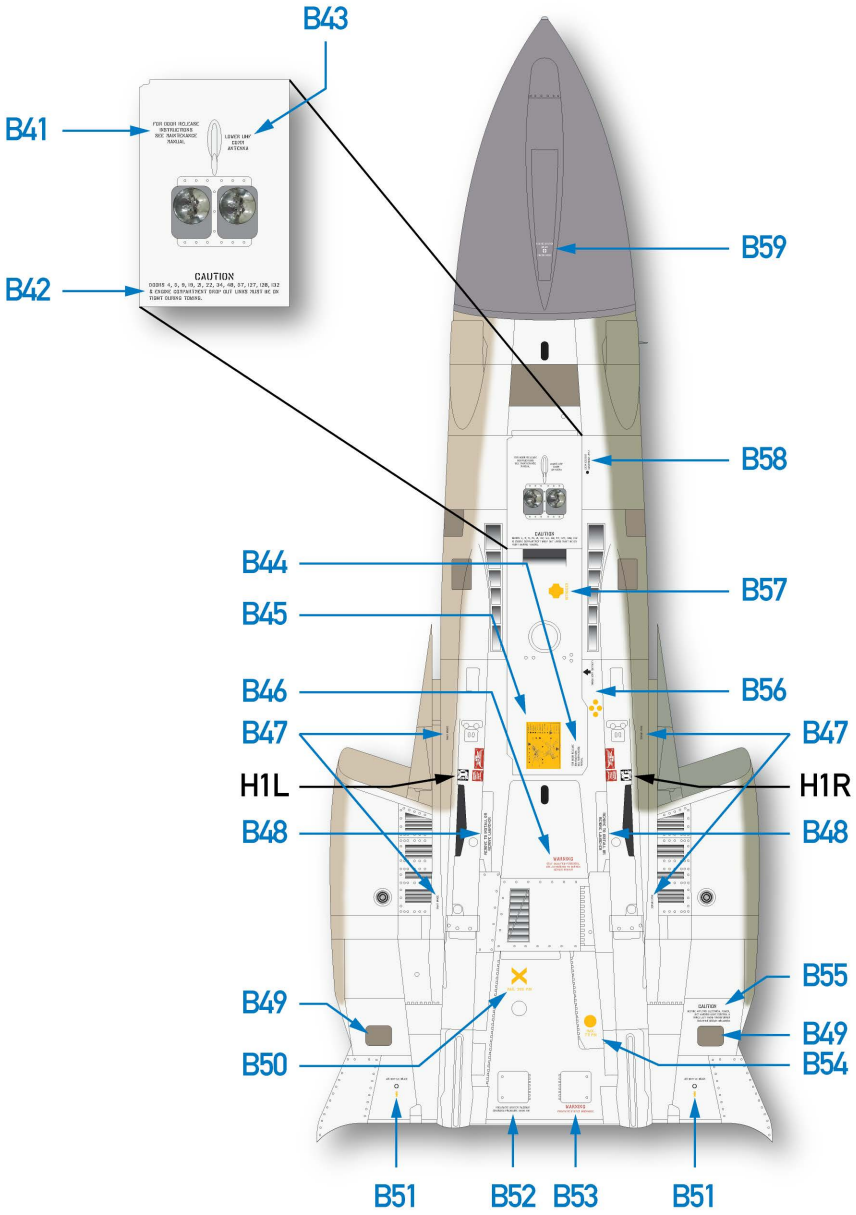
McDonnell Douglas F-4C/D
Instructional Markings
Lower Forward Fuselage



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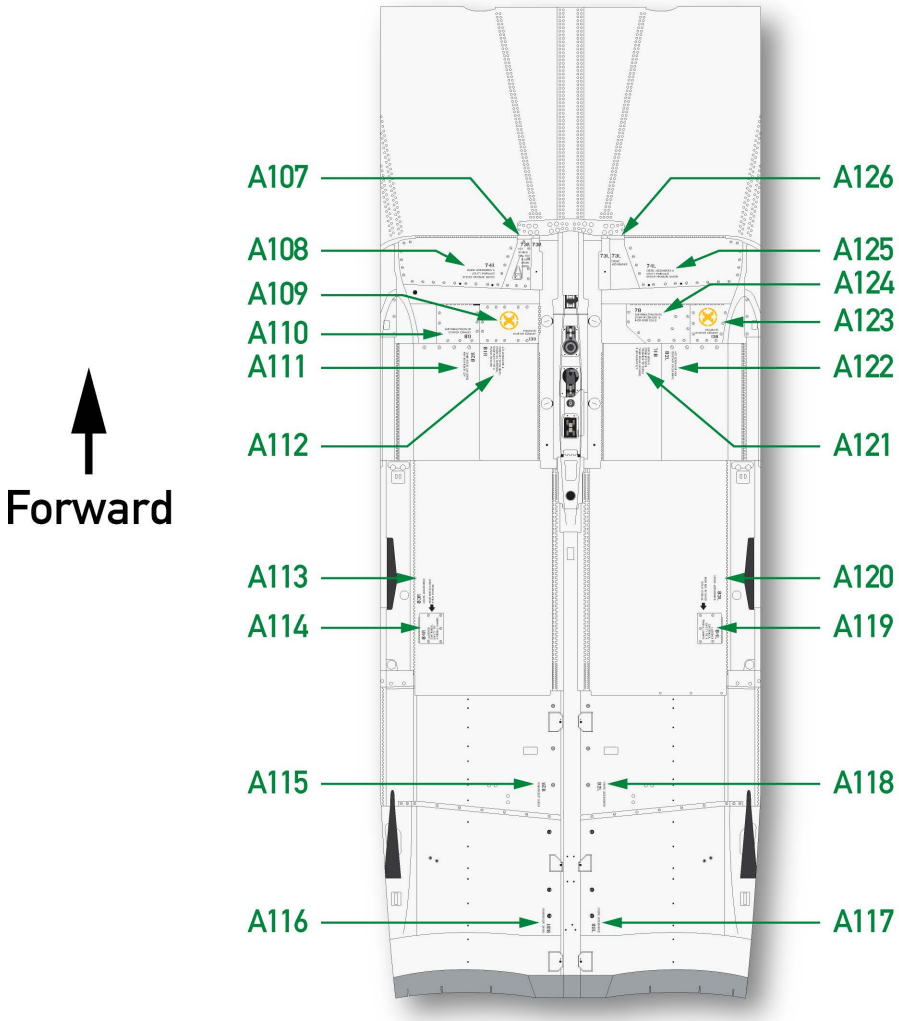
McDonnell Douglas F-4C/D
Access Door Markings
Lower Aft Fuselage



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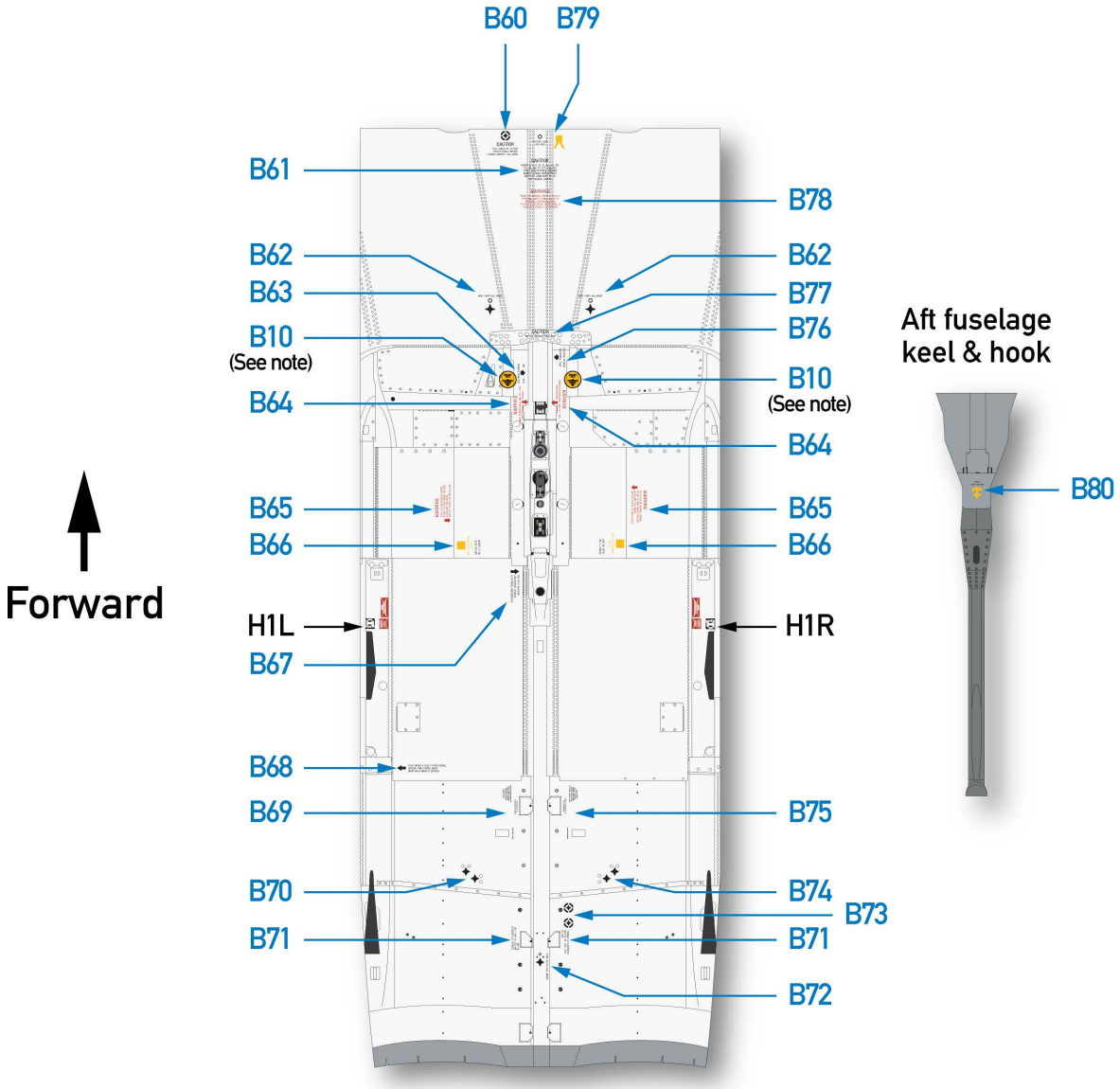
McDonnell Douglas F-4C/D
Instructional Markings
Lower Aft Fuselage



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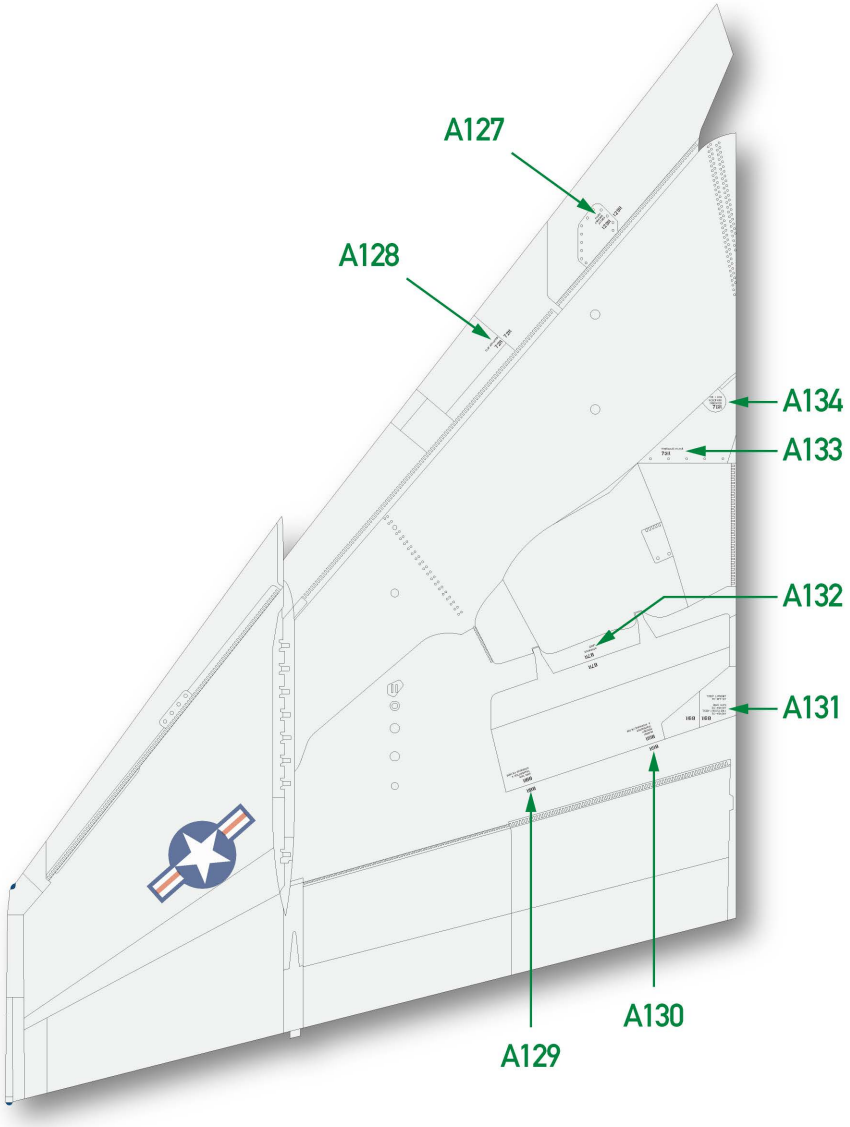
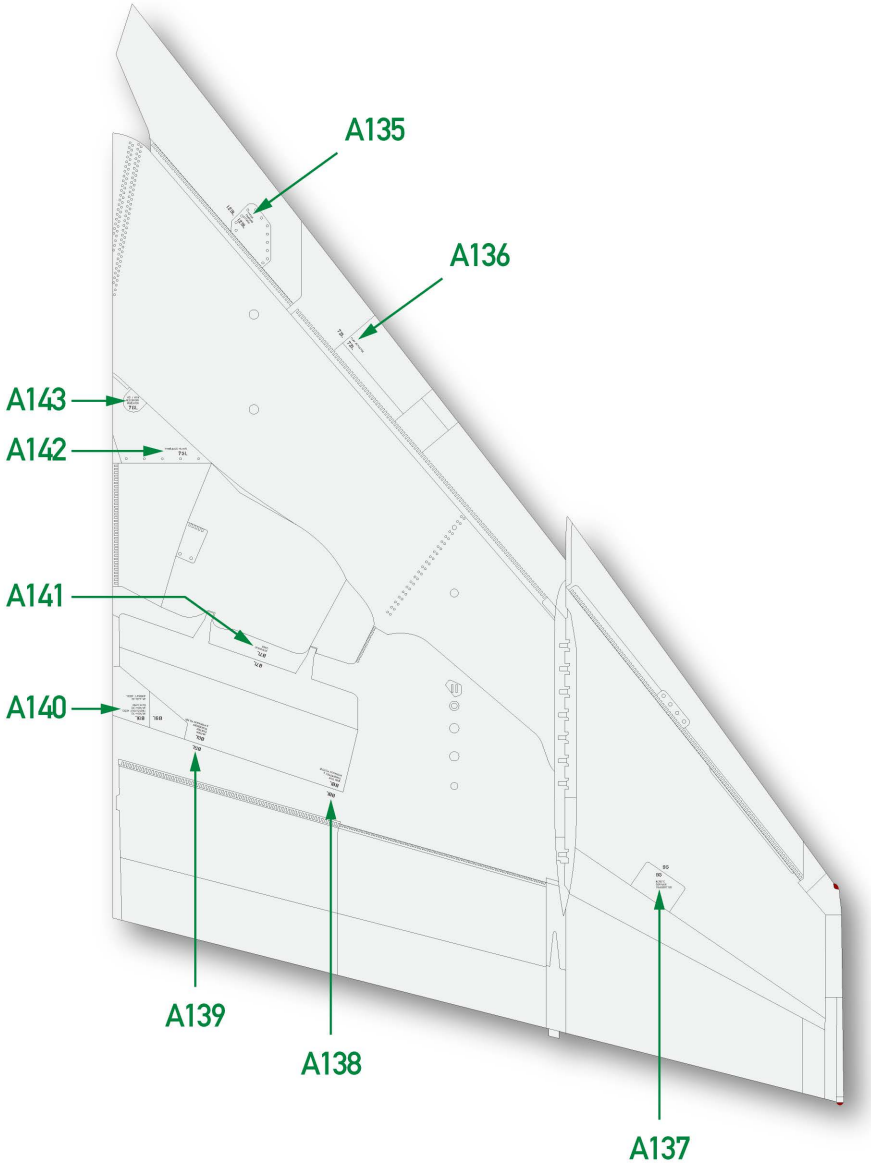
McDonnell Douglas F-4C/D
Access Door Markings
Right Hand Lower Wing



Note:

Decals A129, A130, and A132 are split on the decal so that you can apply the portions on the speed brake separately from the portion on the wing next to it.

McDonnell Douglas F-4C/D
Access Door Markings
Left Hand Lower Wing



Note:

Decals A138, A139, and A141 are split on the decal so that you can apply the portions on the speed brake separately from the portion on the wing next to it.

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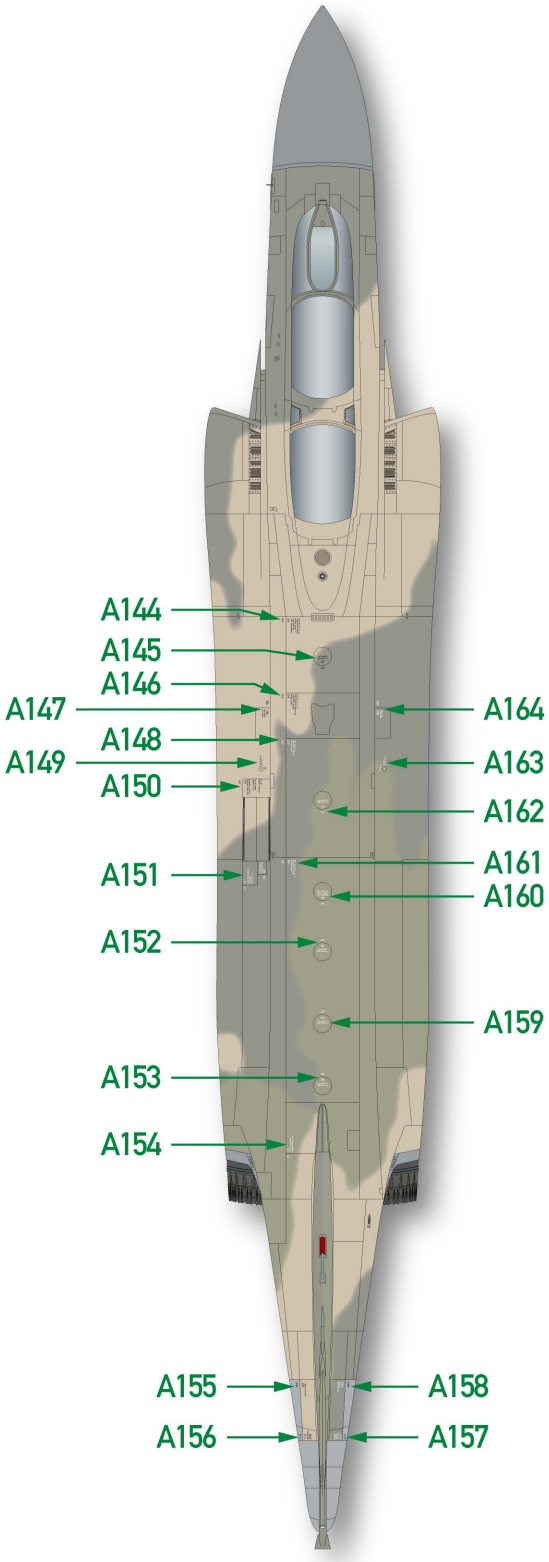
McDonnell Douglas F-4C/D
Access Door Markings
Upper Fuselage



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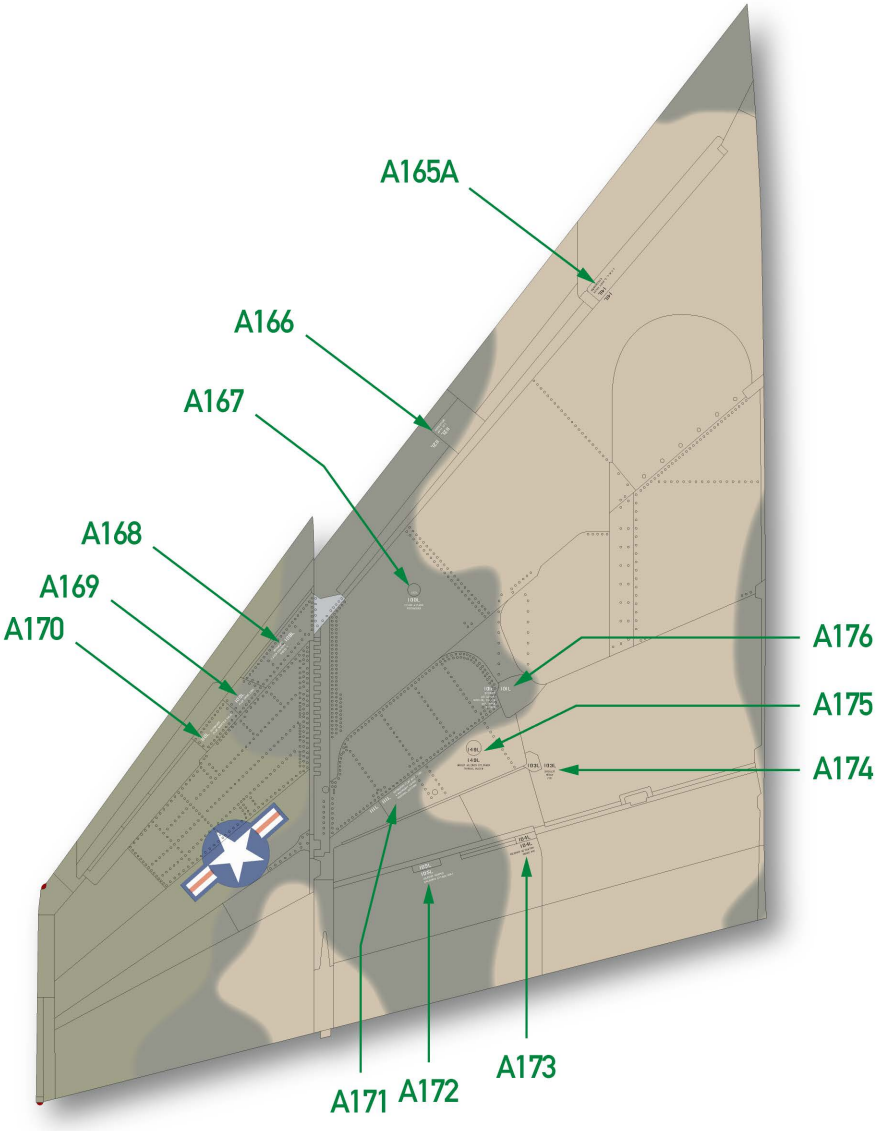
McDonnell Douglas F-4C/D
Access Door Markings
Left Hand Upper Wing



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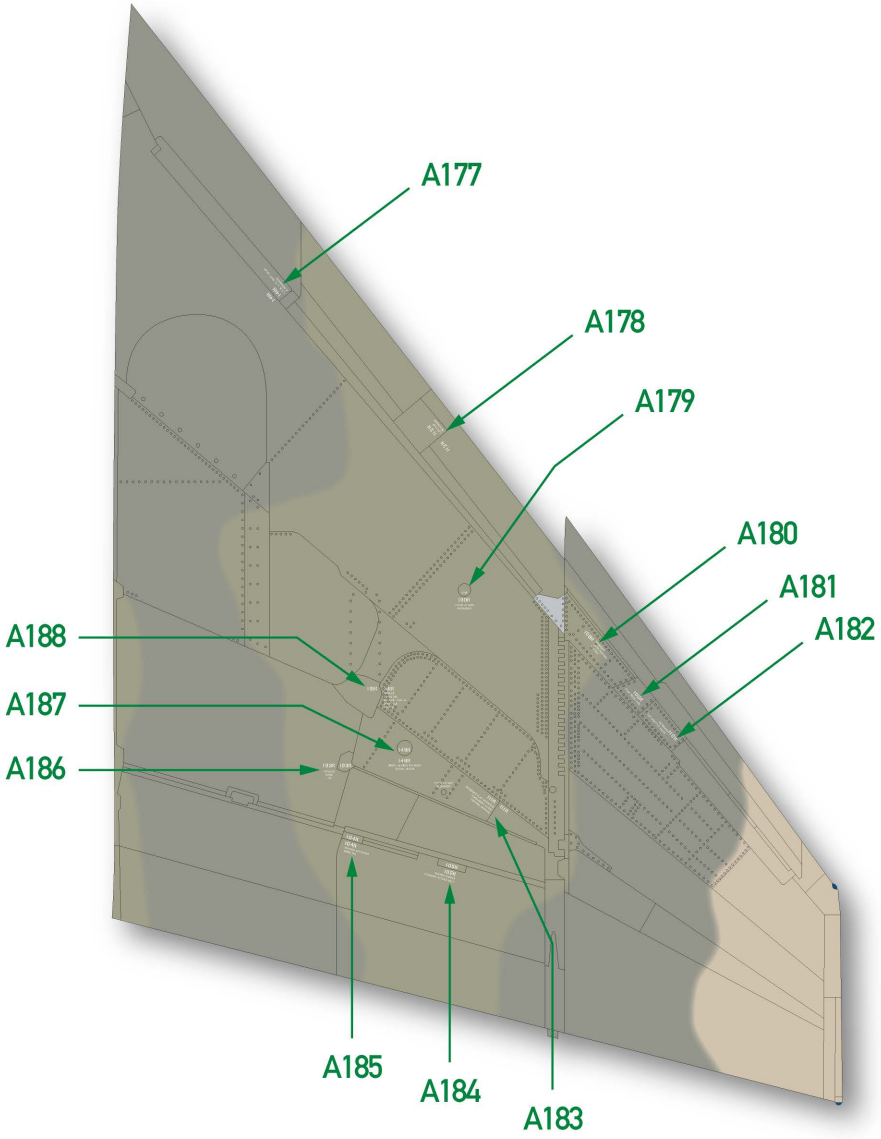
McDonnell Douglas F-4C/D
Access Door Markings
Right Hand Upper Wing



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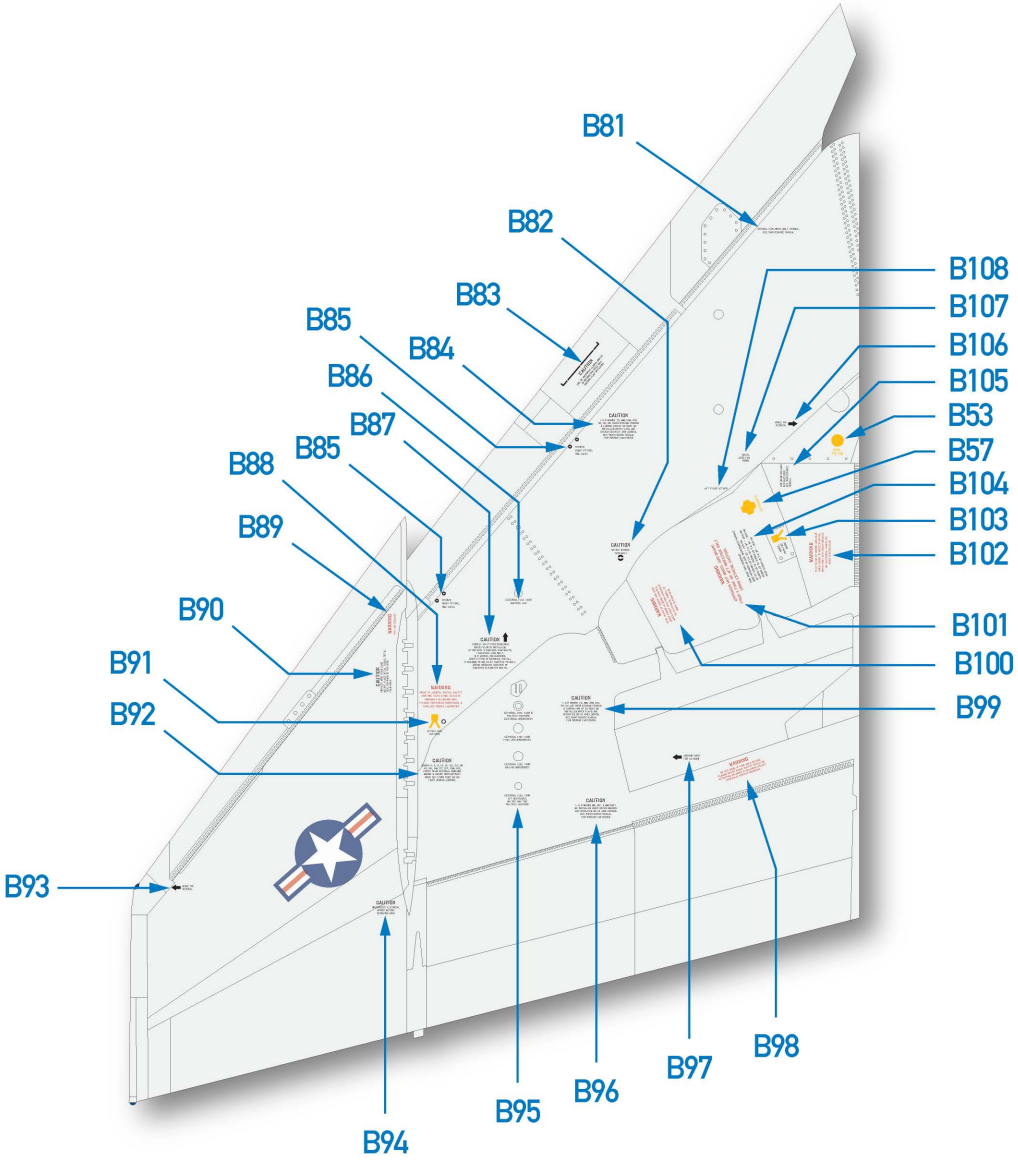
McDonnell Douglas F-4C/D
Instructional Markings
Right Hand Lower Wing



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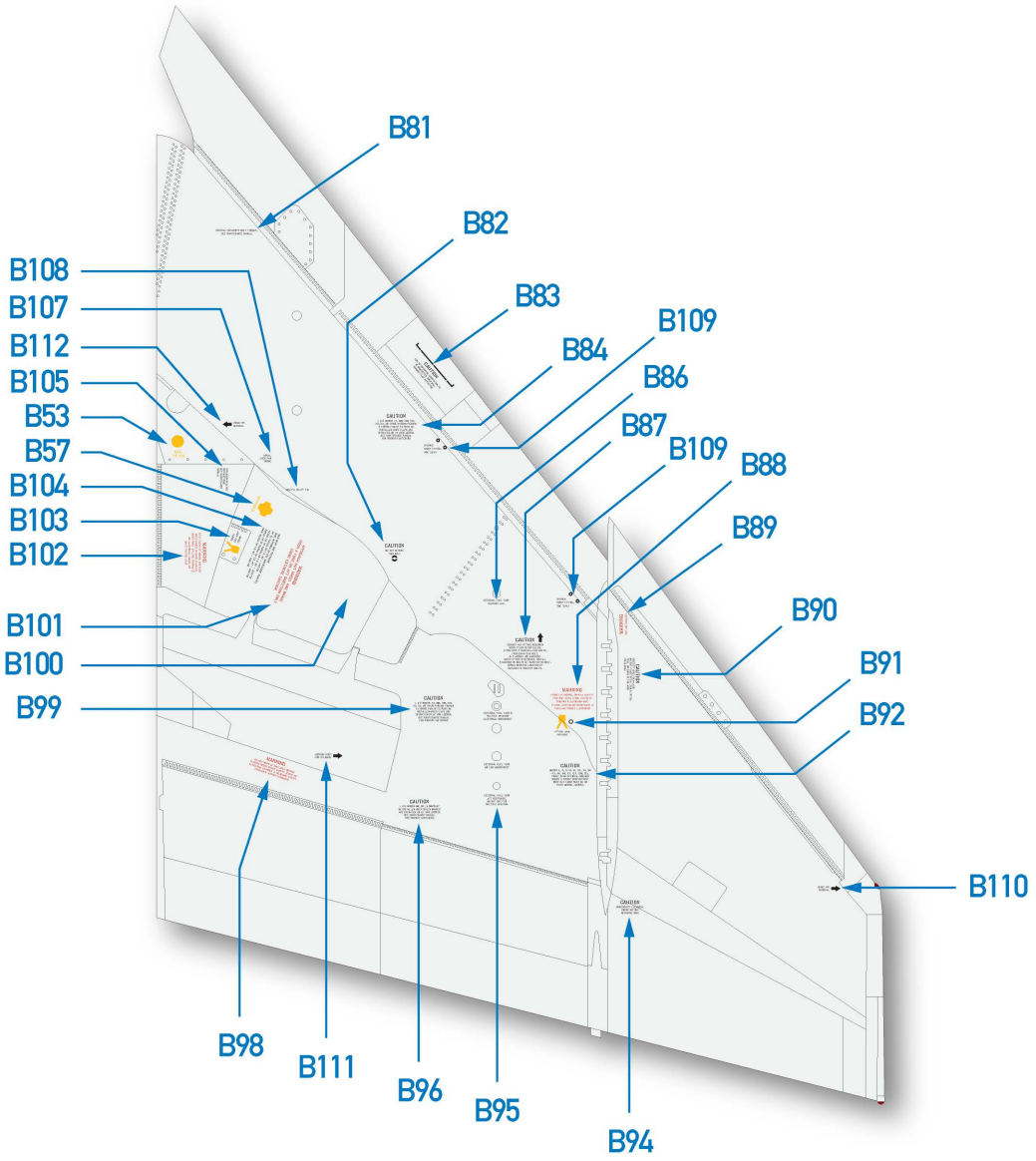
McDonnell Douglas F-4C/D
Instructional Markings
Left Hand Lower Wing



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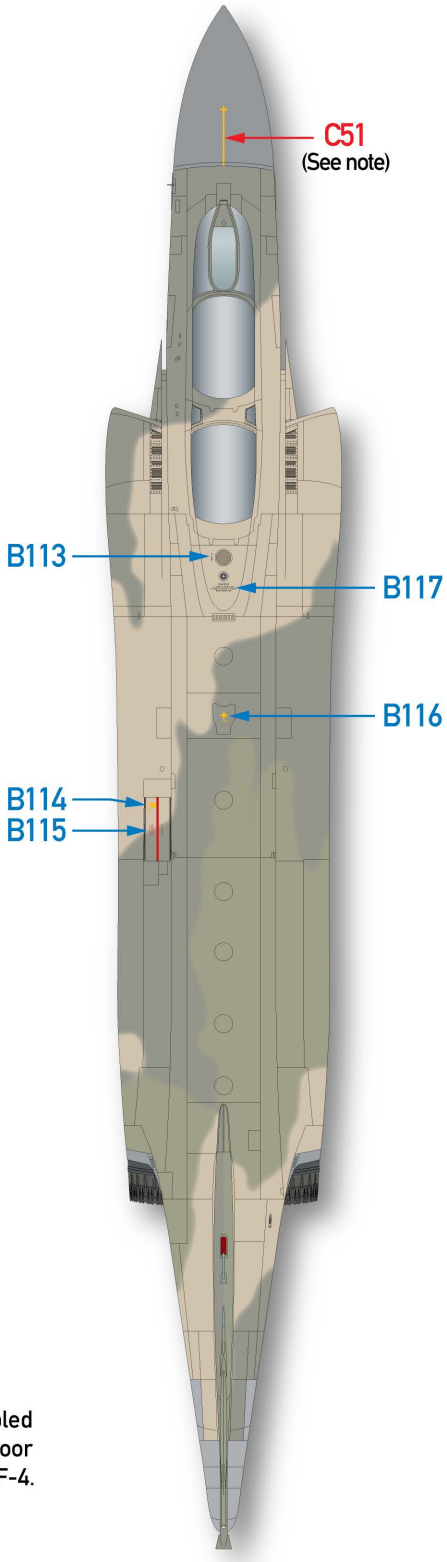
McDonnell Douglas F-4C/D
Instructional Markings
Upper Fuselage



Note:

C51: This item was only infrequently appled to F-4Cs and Ds. Remove the Access Door number when applying to a short nosed F-4.

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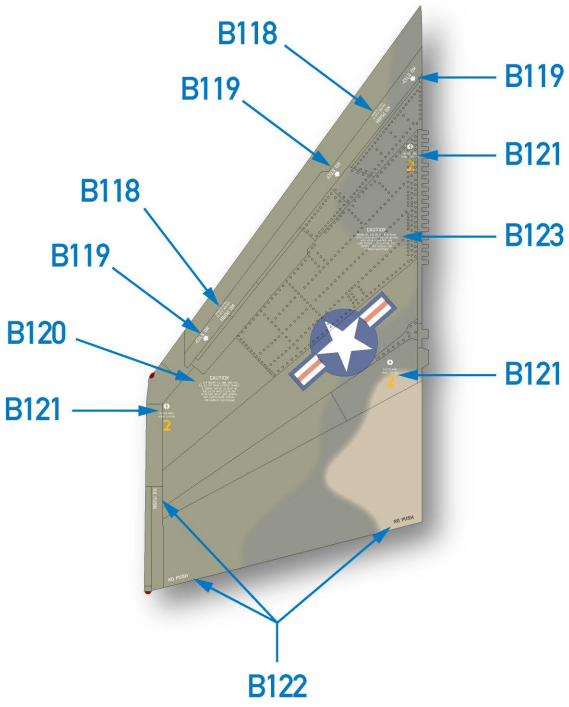
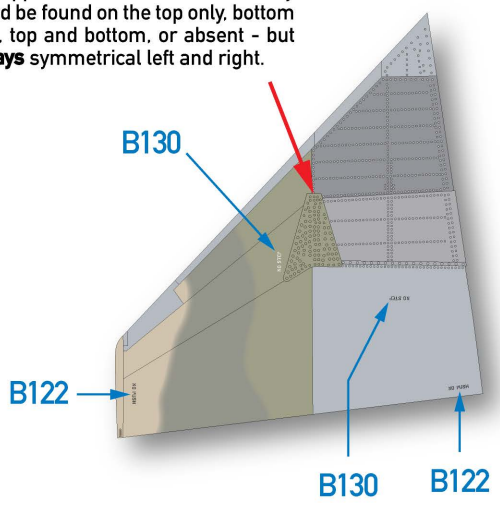
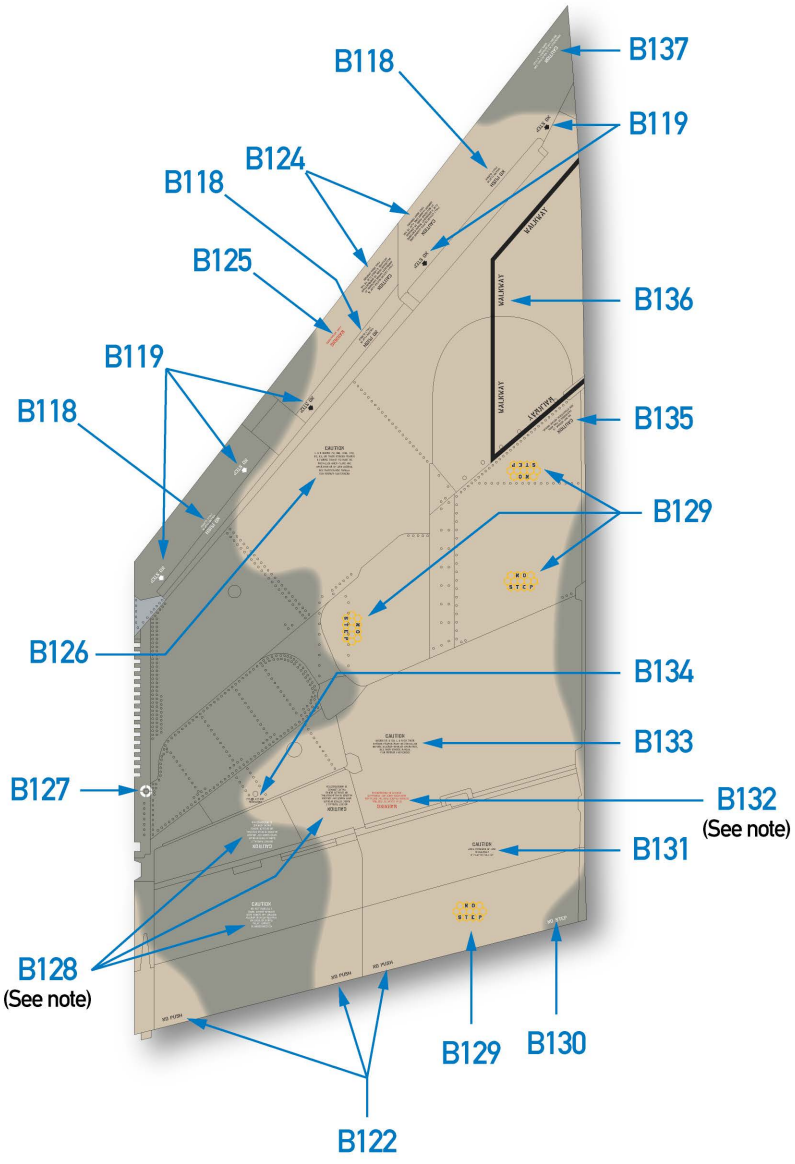
McDonnell Douglas F-4C/D
Instructional Markings
Left Hand Upper Wing & Horizontal Stabilator



Between 1974 and 1983, if present, the arrowhead shaped doubler plates on the horizontal stabs were **only** on the upper surfaces. After 1983 they could be found on the top only, bottom only, top and bottom, or absent - but **always** symmetrical left and right.

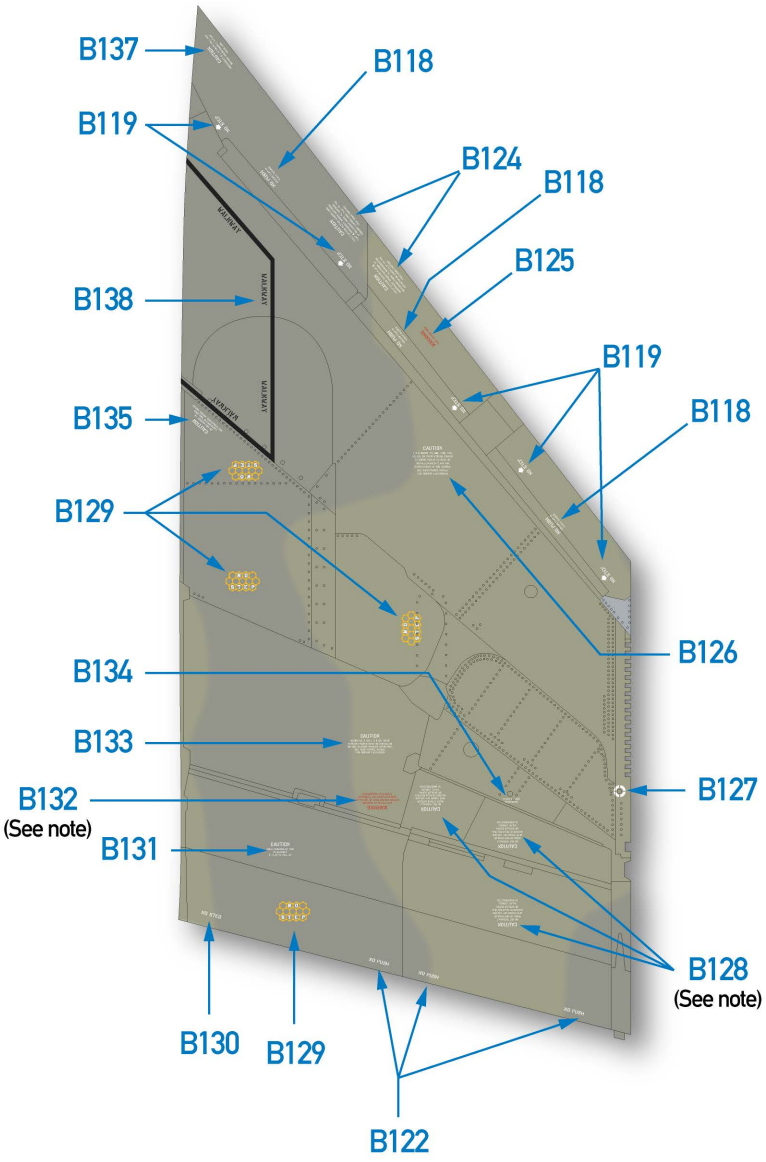


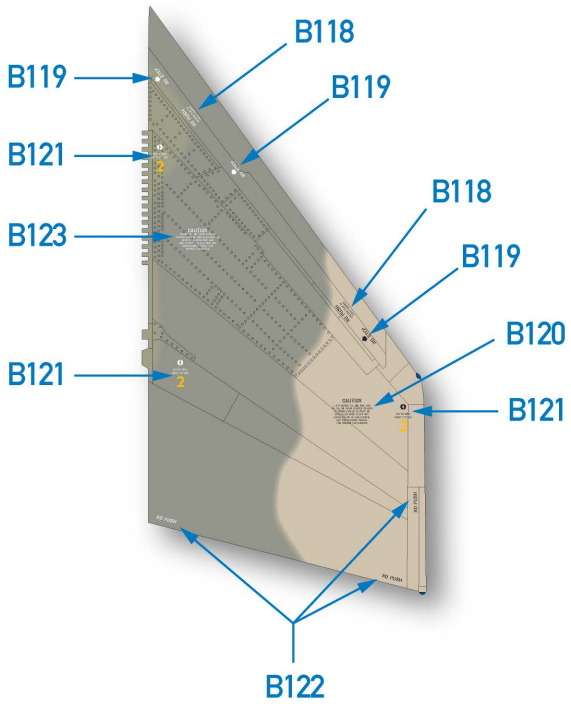


Note:

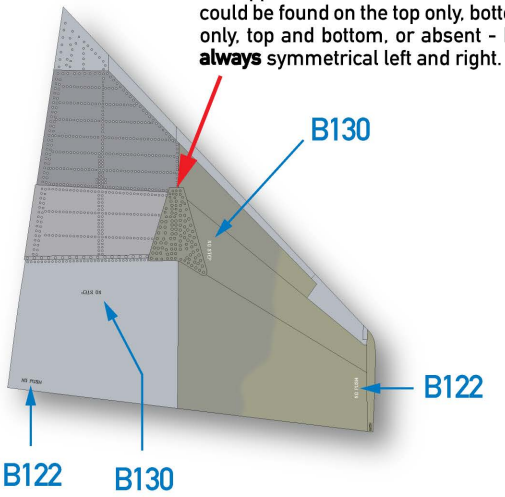
B128/B132: Note the orientation of these items. Tops of letters face the trailing edge of the wing.

McDonnell Douglas F-4C/D
Instructional Markings
Right Hand Upper Wing & Horizontal Stabilator





Between 1974 and 1983, if present, the arrowhead shaped doubler plates on the horizontal stabs were **only** on the upper surfaces. After 1983 they could be found on the top only, bottom only, top and bottom, or absent - but **always** symmetrical left and right.



Note:

B128/B132: Note the orientation of these items. Tops of letters face the trailing edge of the wing.

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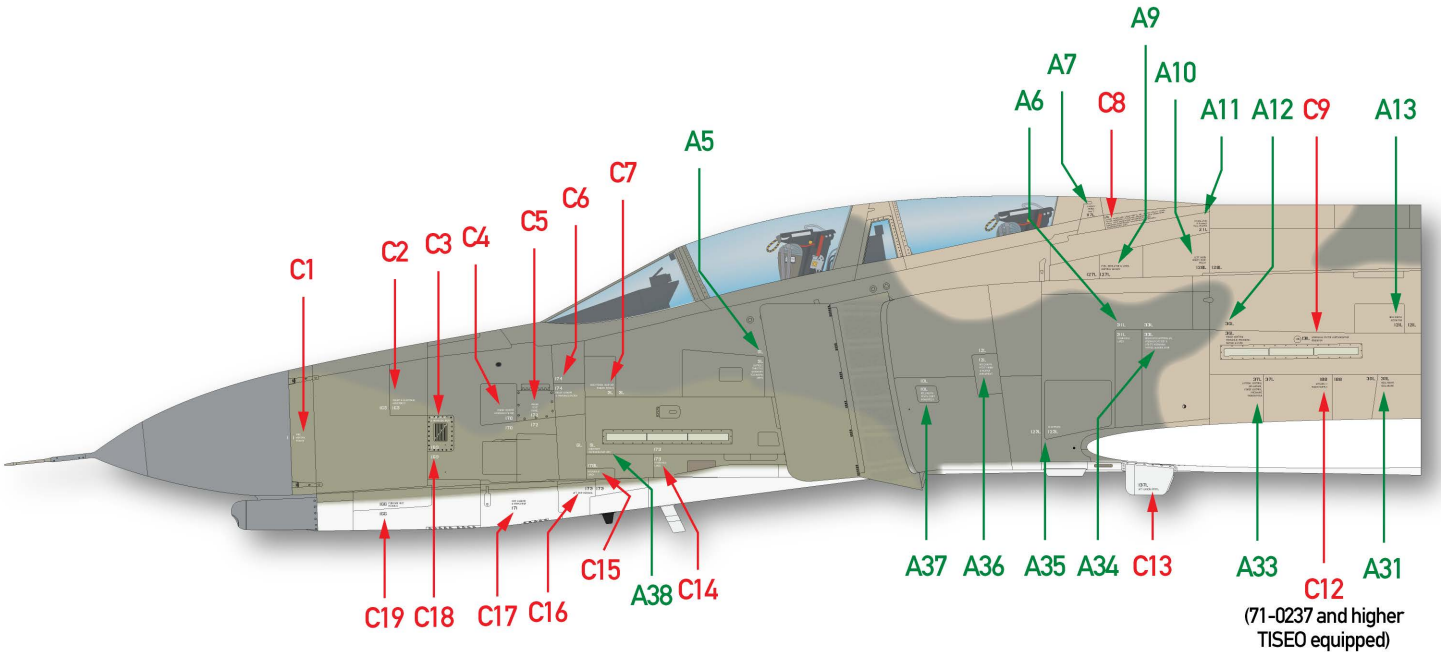
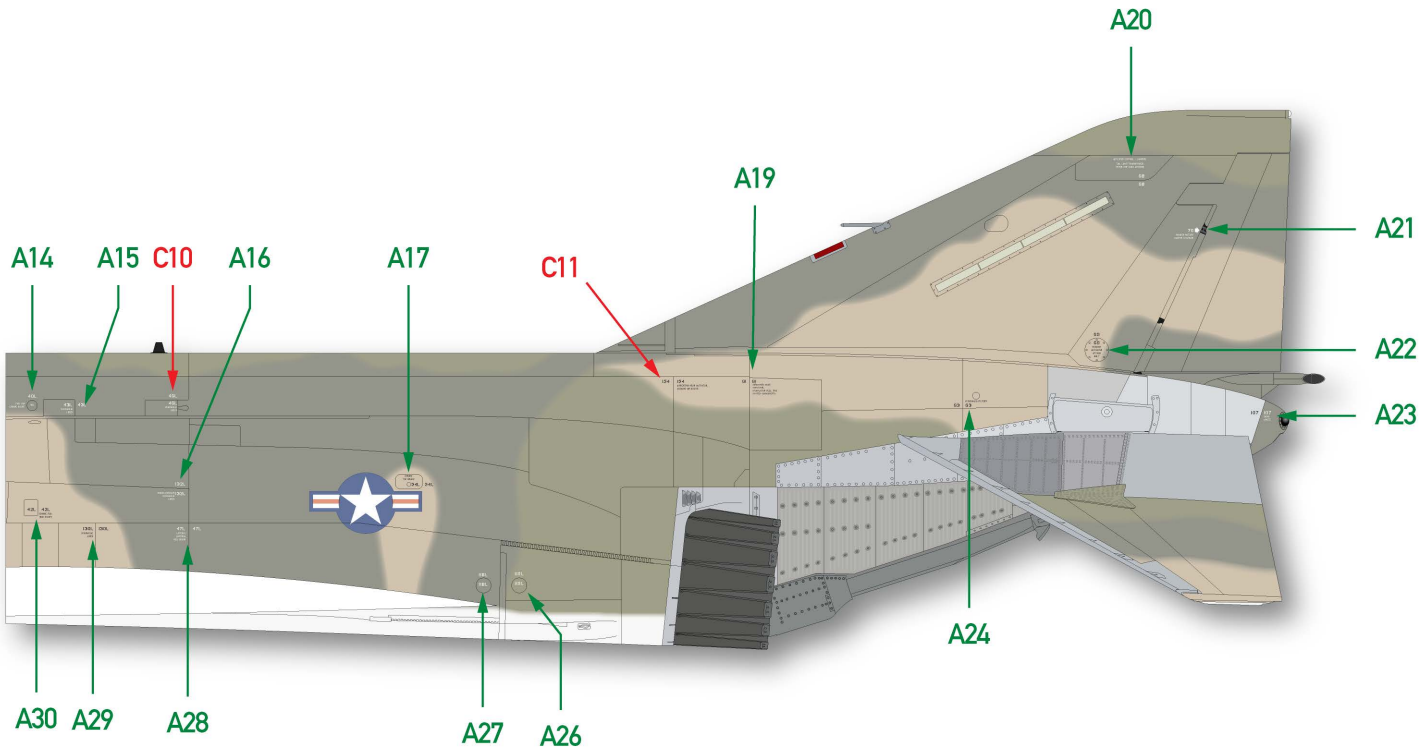
McDonnell Douglas F-4E
Access Door Markings
Left Hand Fuselage



(71-0237 and higher TISEO equipped)



Note:

See notes at the end of the instructions regarding the arrowhead shaped doubler plates on the horizontal stabs. The time period of your subject will dictate which of these, if any, are appropriate.

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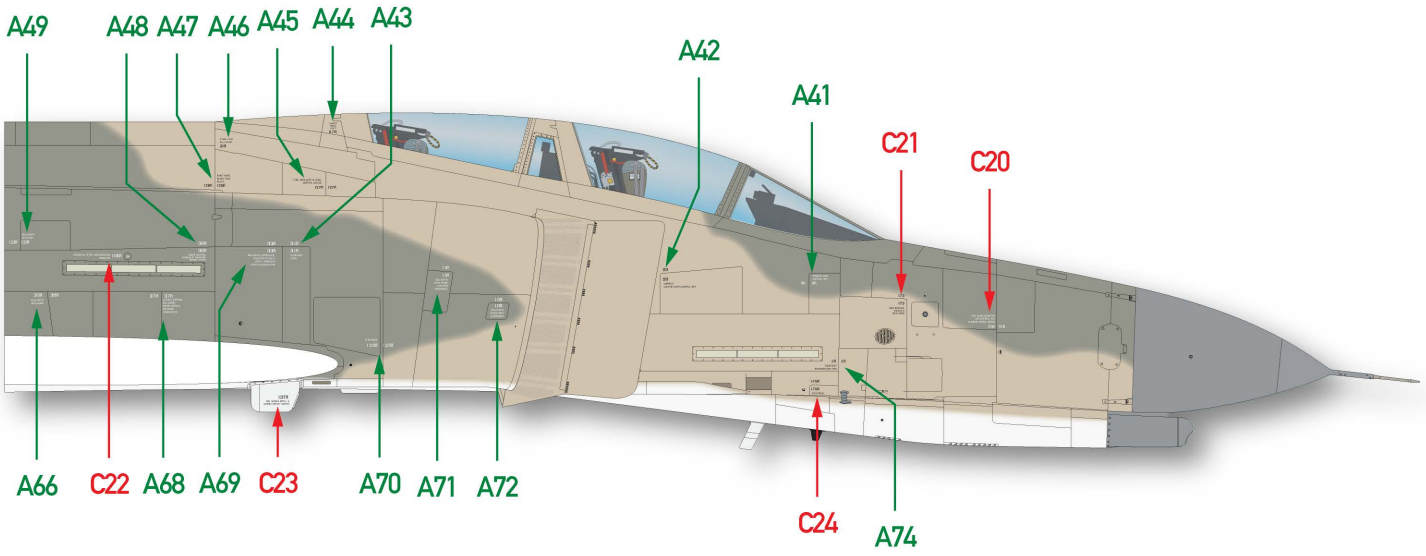
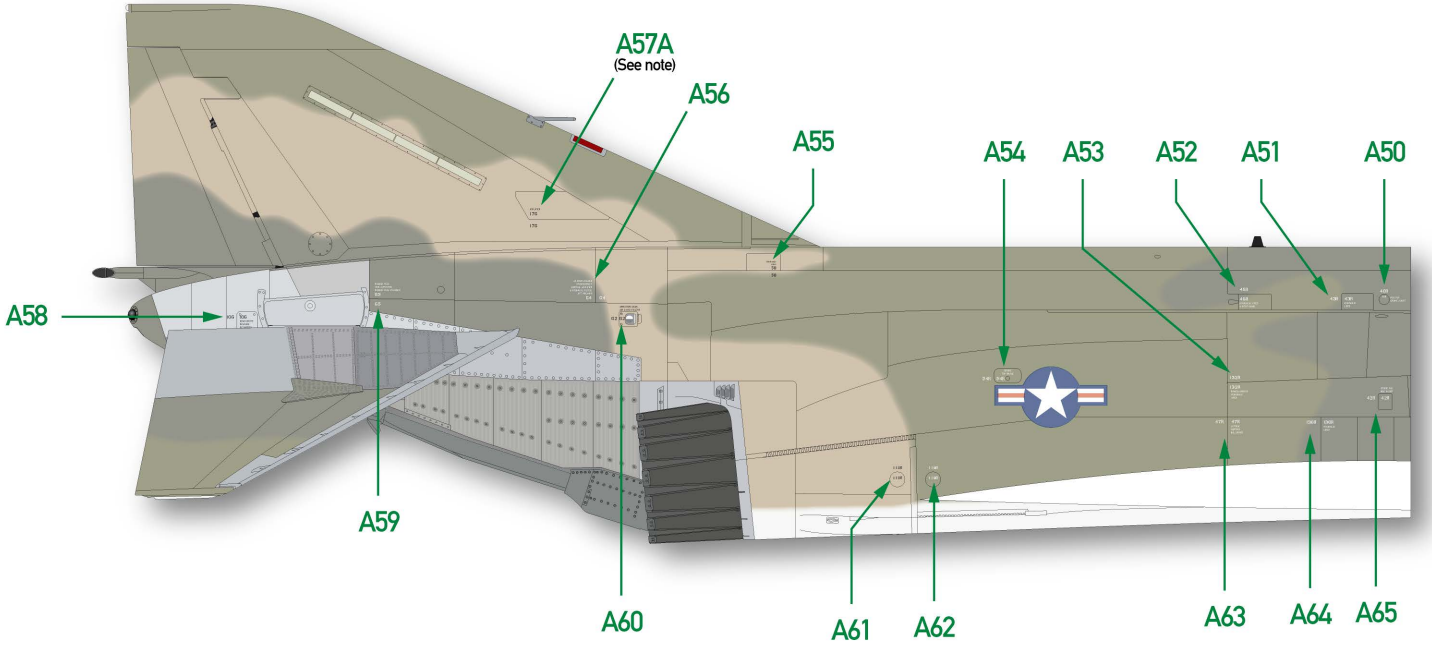
McDonnell Douglas F-4E
Access Door Markings
Right Hand Fuselage





Note:

A57A: This access door was only found on F-4Es built prior to the factory installation of APR-35/36 RHAW gear. We have not been able to determine when this change took place, but we believe it was sometime around 1970, possibly with the F-4E-42-MC (69-0236). Check photos of your subject aircraft whenever possible.

See notes at the end of the instructions regarding the arrowhead shaped doubler plates on the horizontal stabs. The time period of your subject will dictate which of these, if any, are appropriate.

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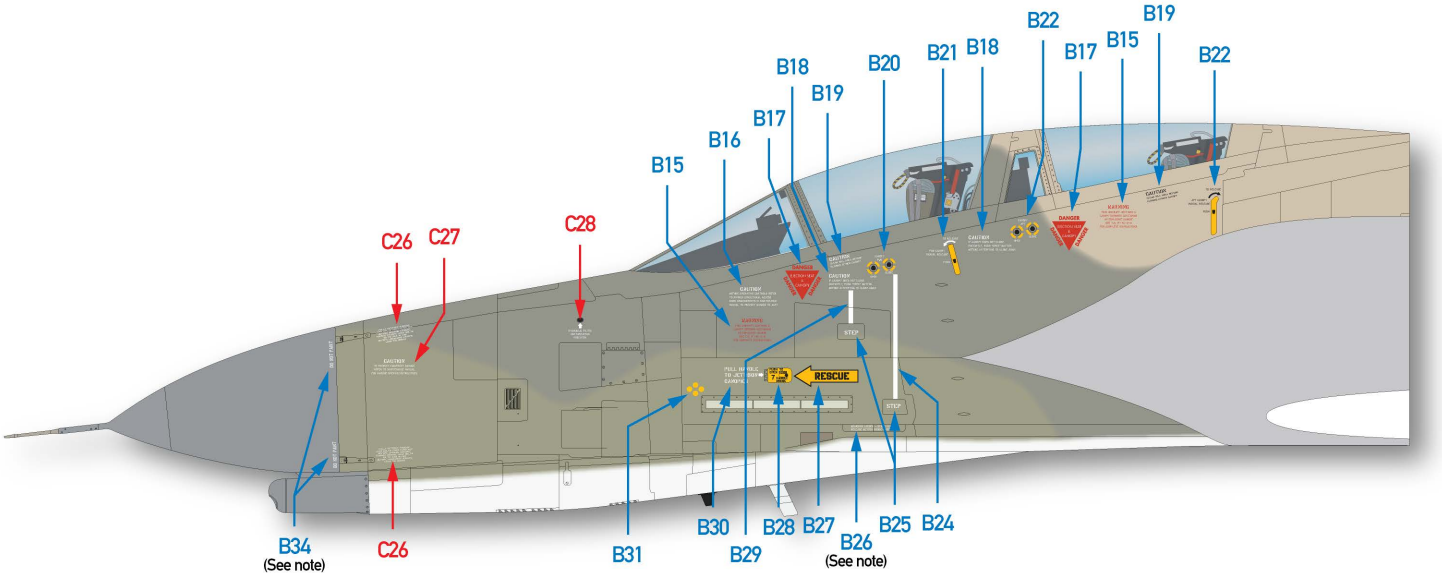
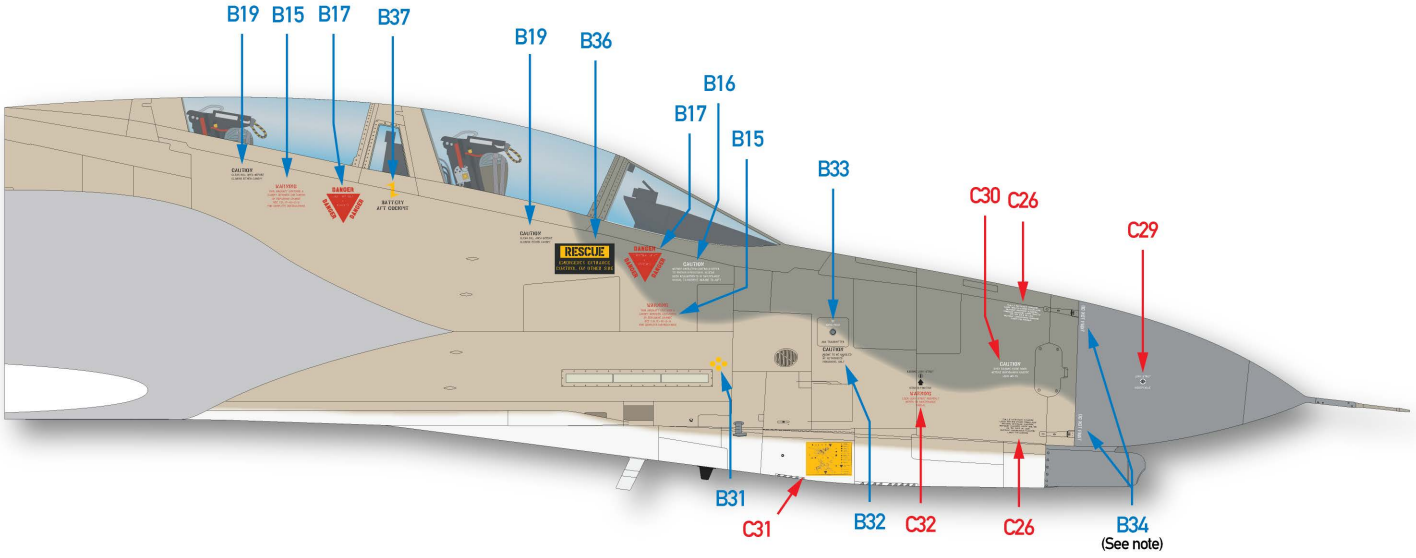
McDonnell Douglas F-4E
Instructional Markings
Forward Fuselage





Notes:

B44/29: The kick step guide stripes were applied in all manner of different configurations. We have provided enough stripe to allow you to do any version you might come across. Trim stripes as needed for your subject.

B34: These items were not always applied were not always symmetrical when they were. Apply as appropriate for your subject.

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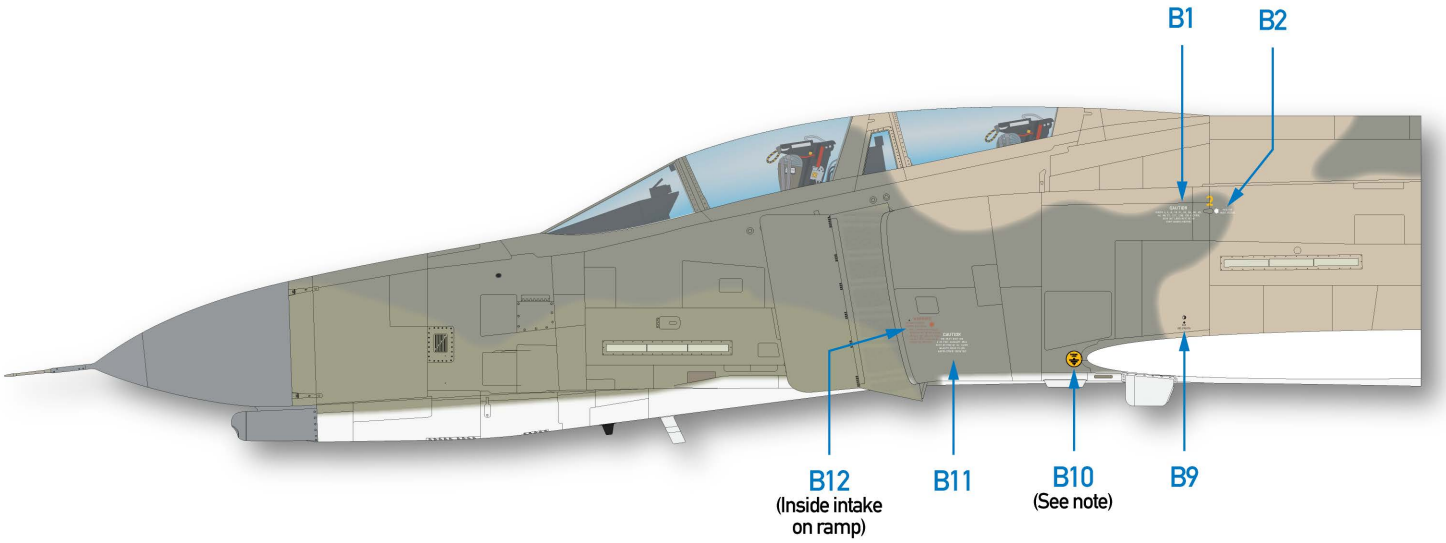
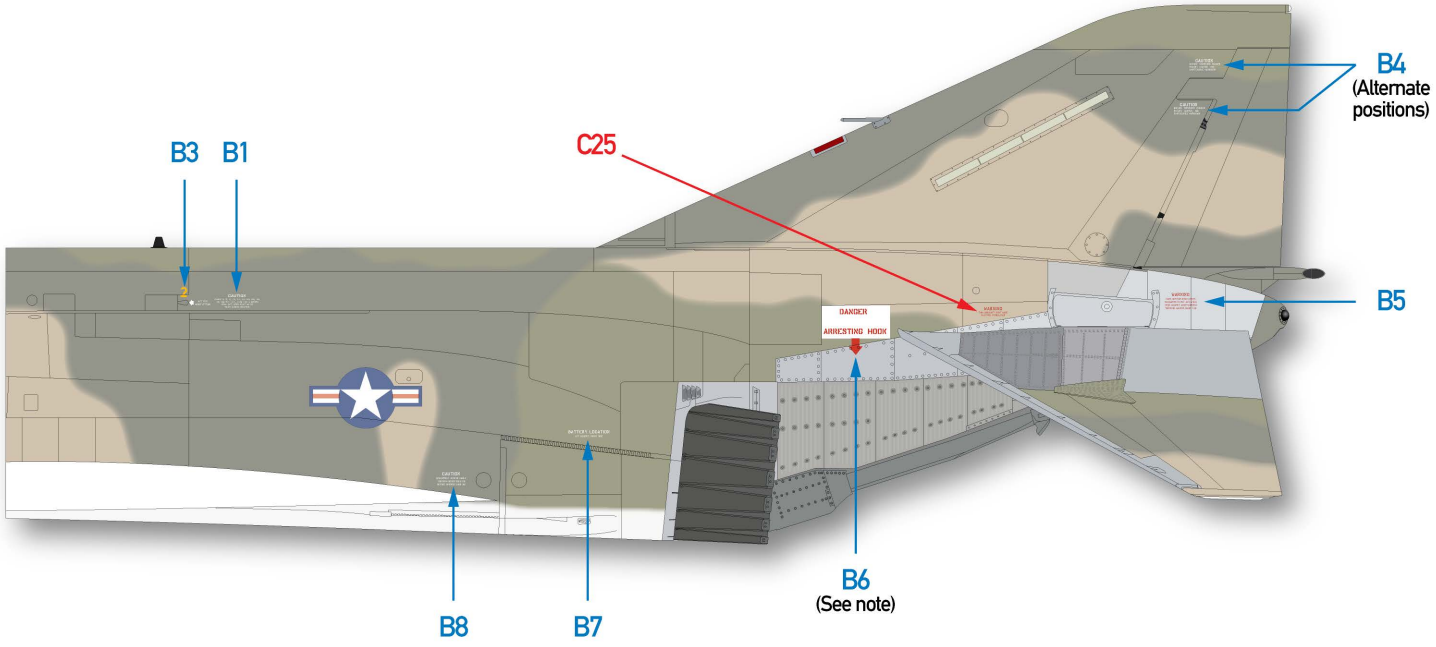
McDonnell Douglas F-4E
Instructional Markings
Left Hand Fuselage



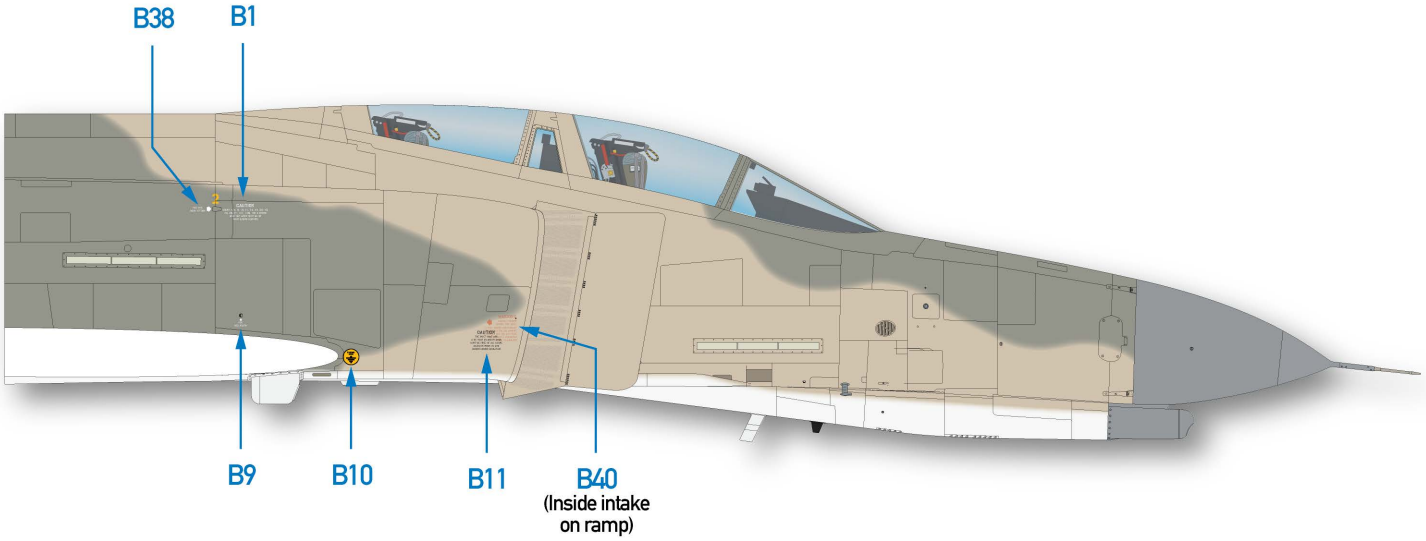


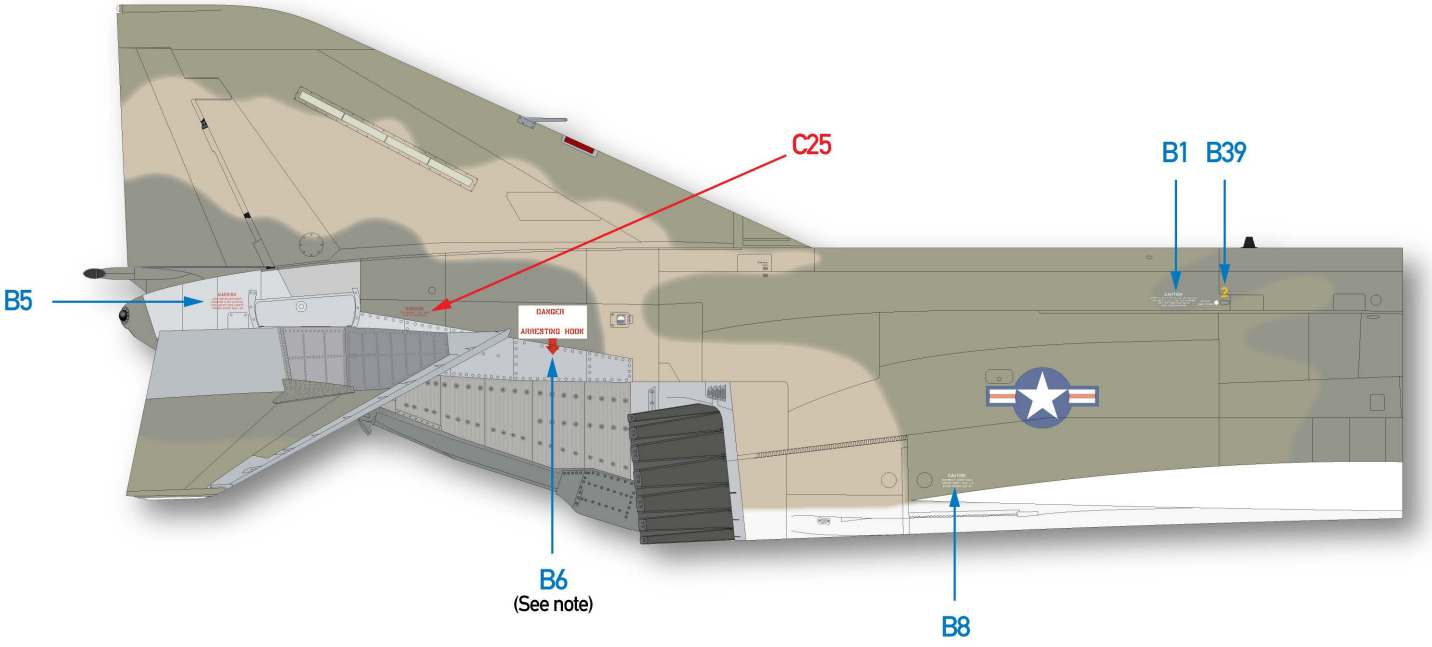
Notes:

B6: The tail hook warnings were applied in many variations, or not at all. We have provided a number of different versions, all taken from period photos. Choose the most appropriate version for your subject.

B10: This was not applied to early F-4Es (which lacked the grounding plug in this position). It was applied to later block aircraft, but we have been unable to determine precisely when it was first installed on the production line, but to date, the earliest serial we can positively identify it on is F-4E-48-MC 71-0234. The grounding plug was added to most earlier aircraft during PDM in the 1970s.

McDonnell Douglas F-4E
Instructional Markings
Right Hand Fuselage





Note:

B6: The tail hook warnings were applied in many variations, or not at all. We have provided a number of different versions, all taken from period photos. Choose the most appropriate version for your subject.

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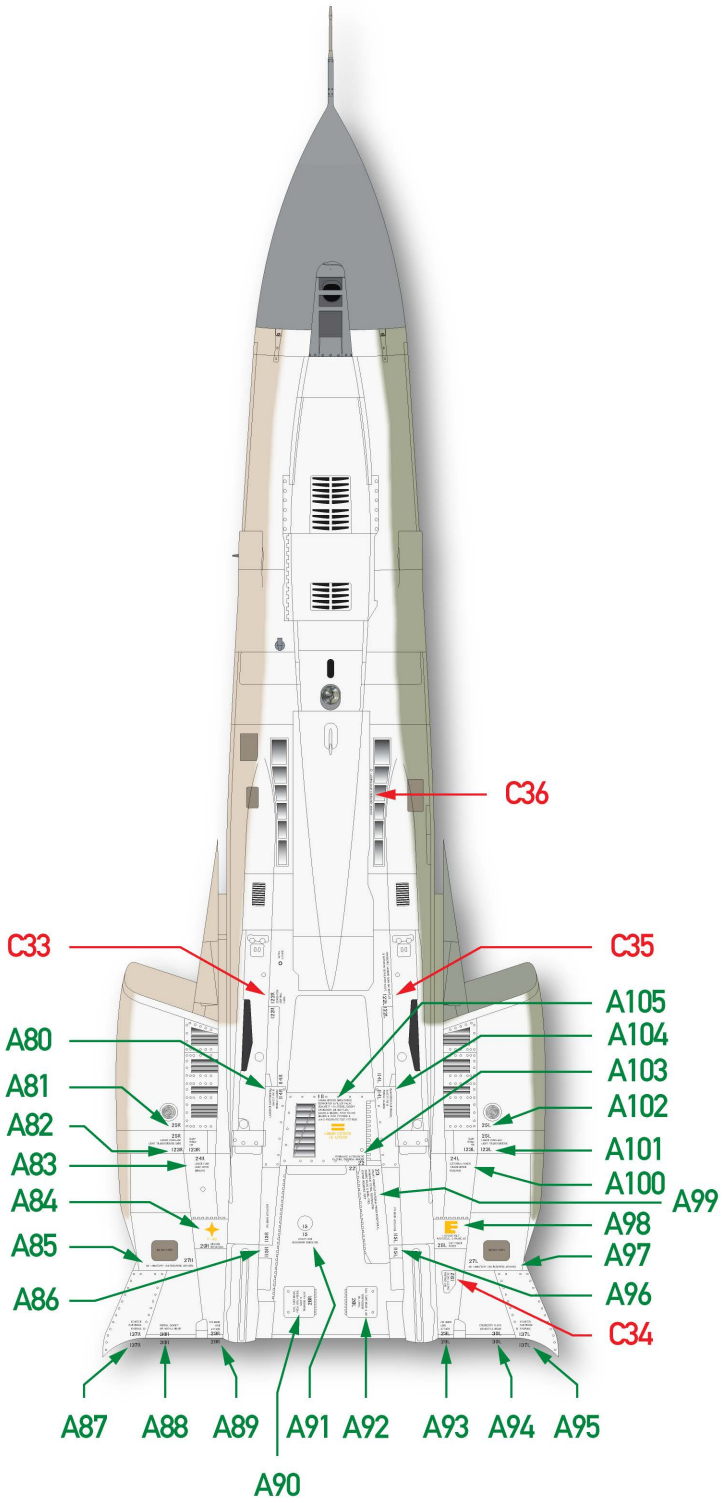
McDonnell Douglas F-4E

Access Door Markings

Lower Forward Fuselage



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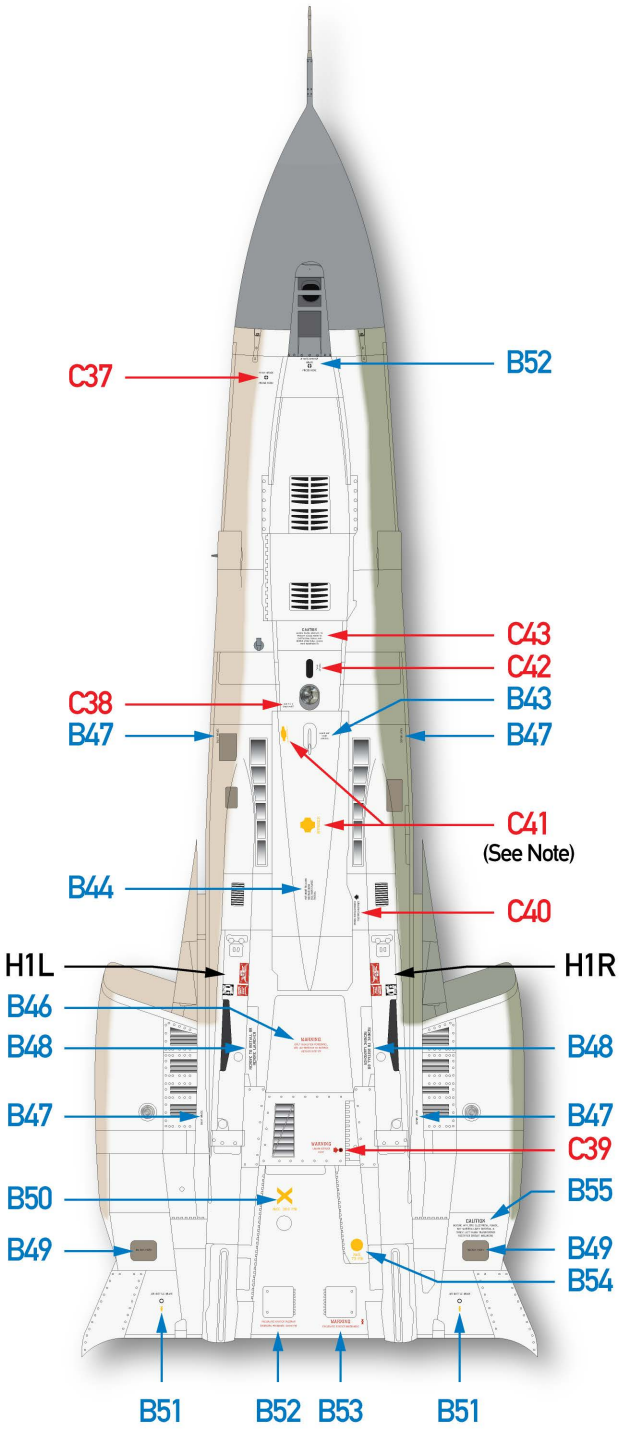
McDonnell Douglas F-4E
Instructional Markings
Lower Forward Fuselage



Note:

C41: Both locations were common, but marking was only applied in one or the other location, not both. Check references for your specific subject.

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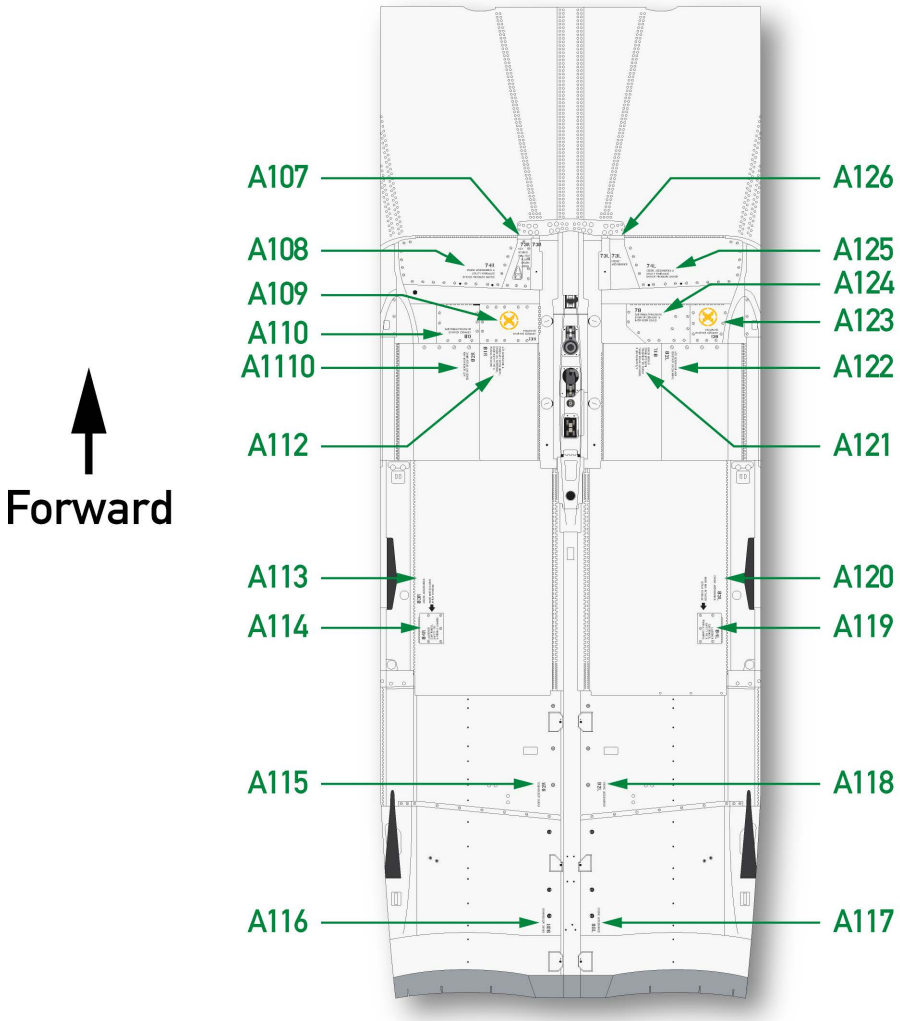
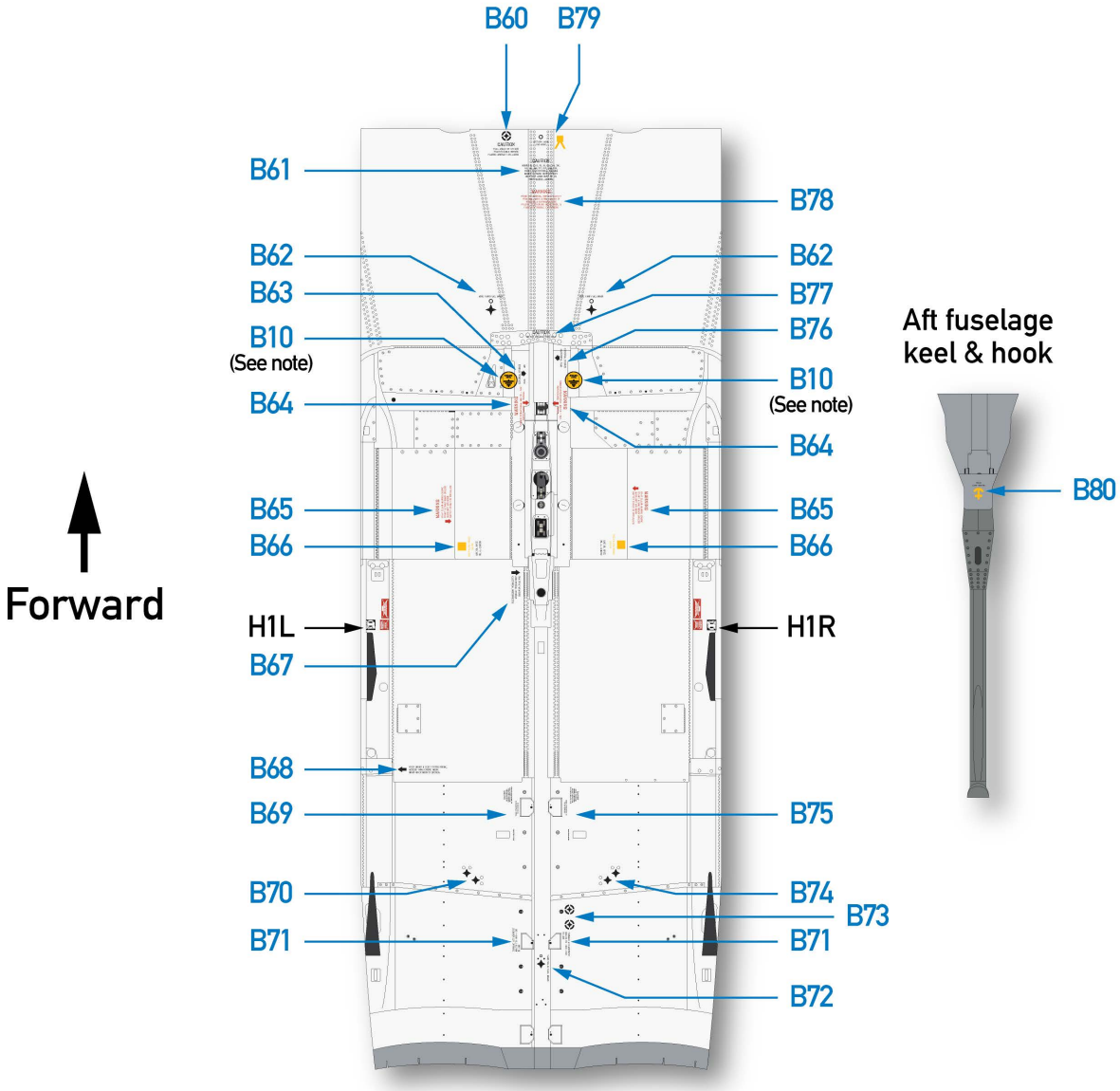
McDonnell Douglas F-4E
Access Door Markings
Lower Aft Fuselage



McDonnell Douglas F-4E
Instructional Markings
Lower Aft Fuselage



Note:

B10: There were many variations in the style of this marking, and different styles could be mixed on the same airframe at any given time. Choose from among the different variants provided for your subject.

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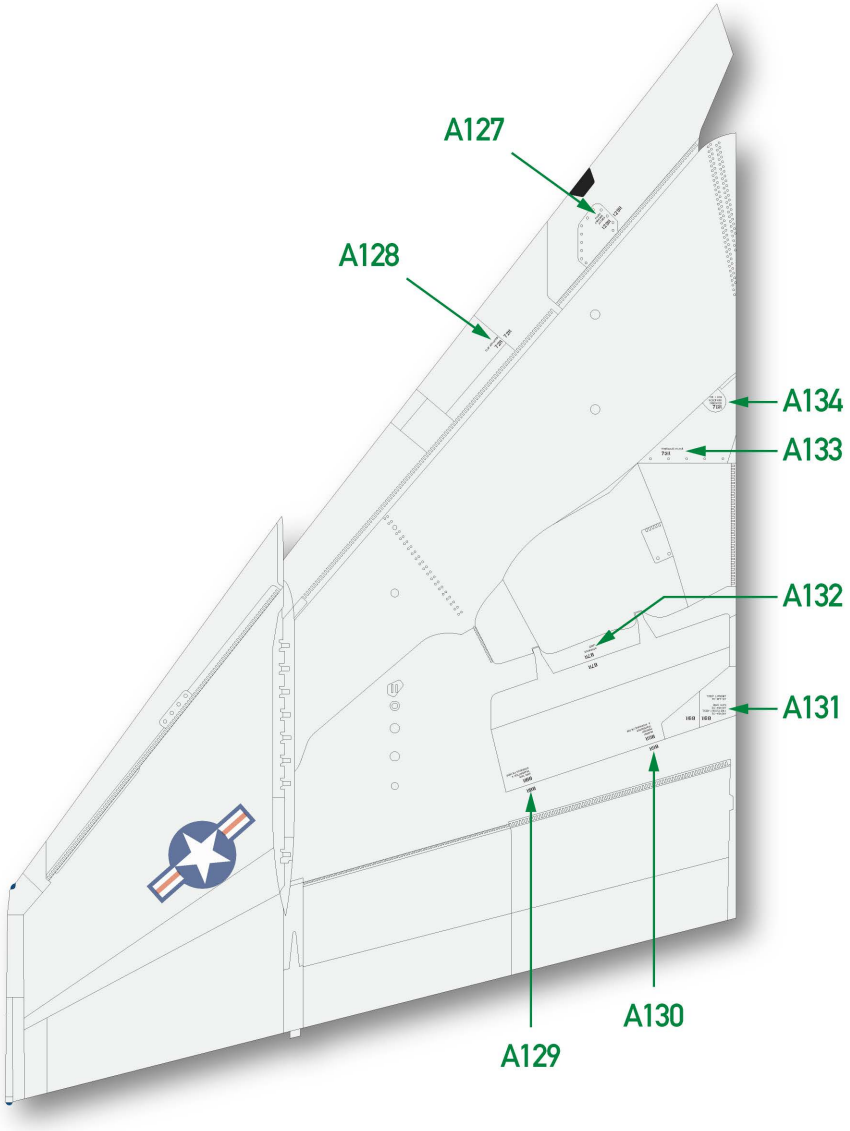
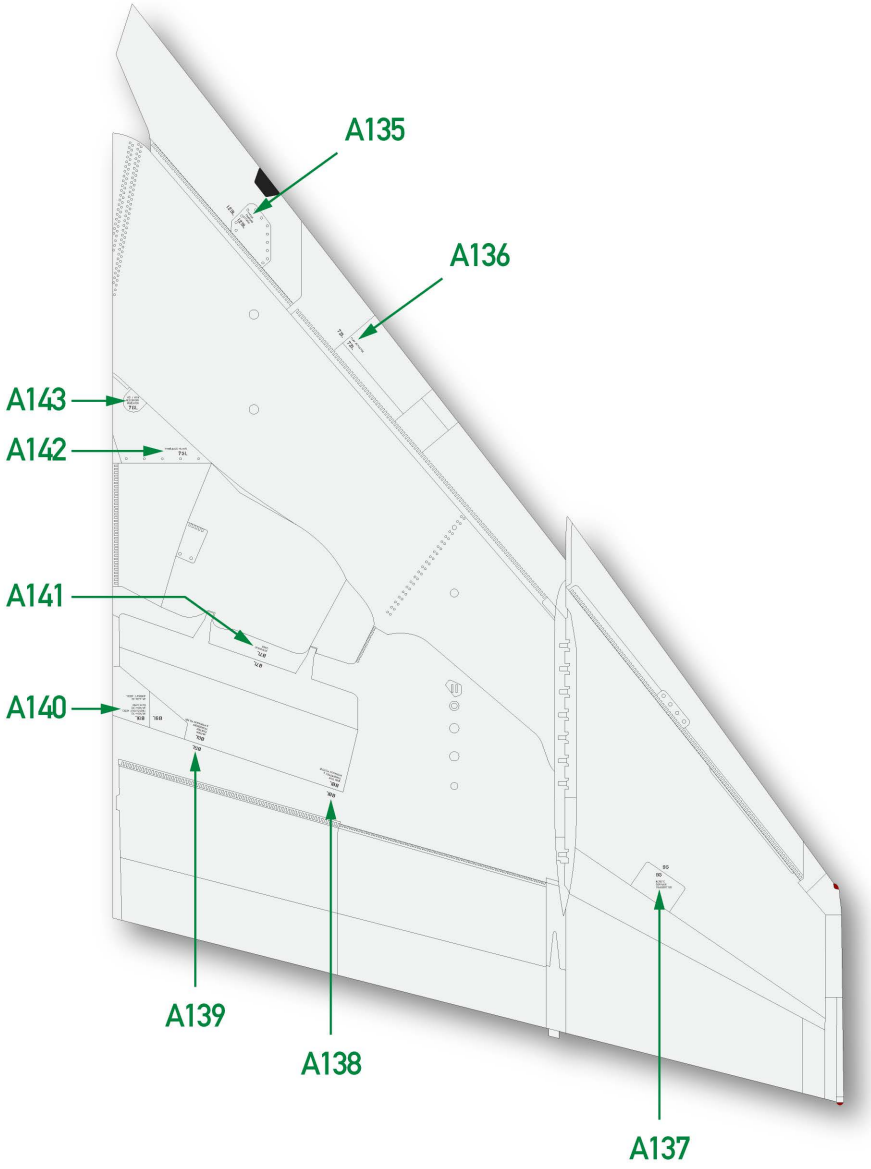
McDonnell Douglas F-4E
Access Door Markings - Unslatted Wing
Right Hand Lower Wing



Note:

Decals A129, A130, and A132 are split on the decal so that you can apply the portions on the speed brake separately from the portion on the wing next to it.

McDonnell Douglas F-4E
Access Door Markings - Unslatted Wing
Left Hand Lower Wing



Note:

Decals A138, A139, and A141 are split on the decal so that you can apply the portions on the speed brake separately from the portion on the wing next to it.

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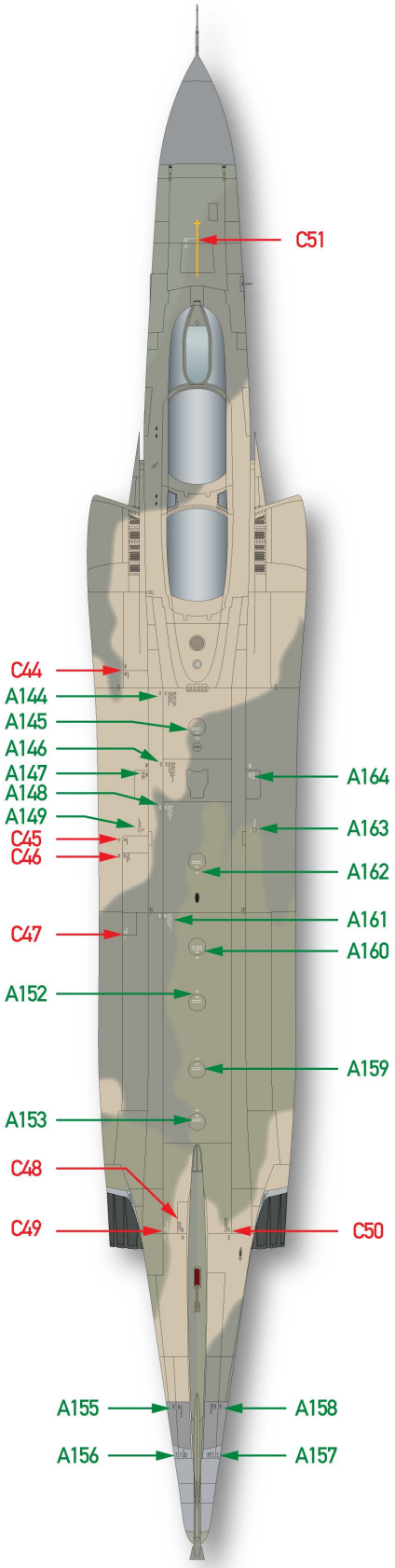
McDonnell Douglas F-4E

Access Door Markings

Upper Fuselage



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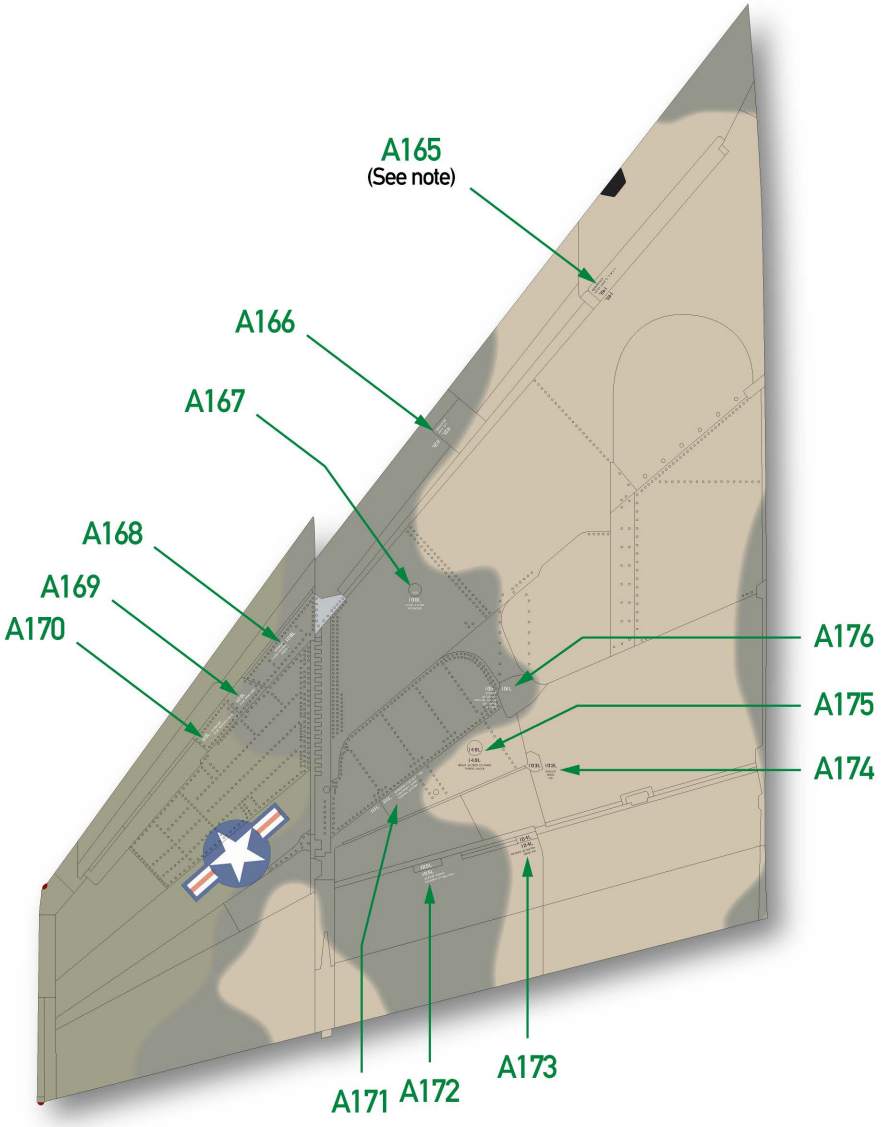
McDonnell Douglas F-4E
Access Door Markings - Unslatted Wing
Left Hand Upper Wing



Note:

A165A: 66-0284 - 67-0207
A165B: 67-0208 - 69-7589
A165C: 71-0224 - 71-0236

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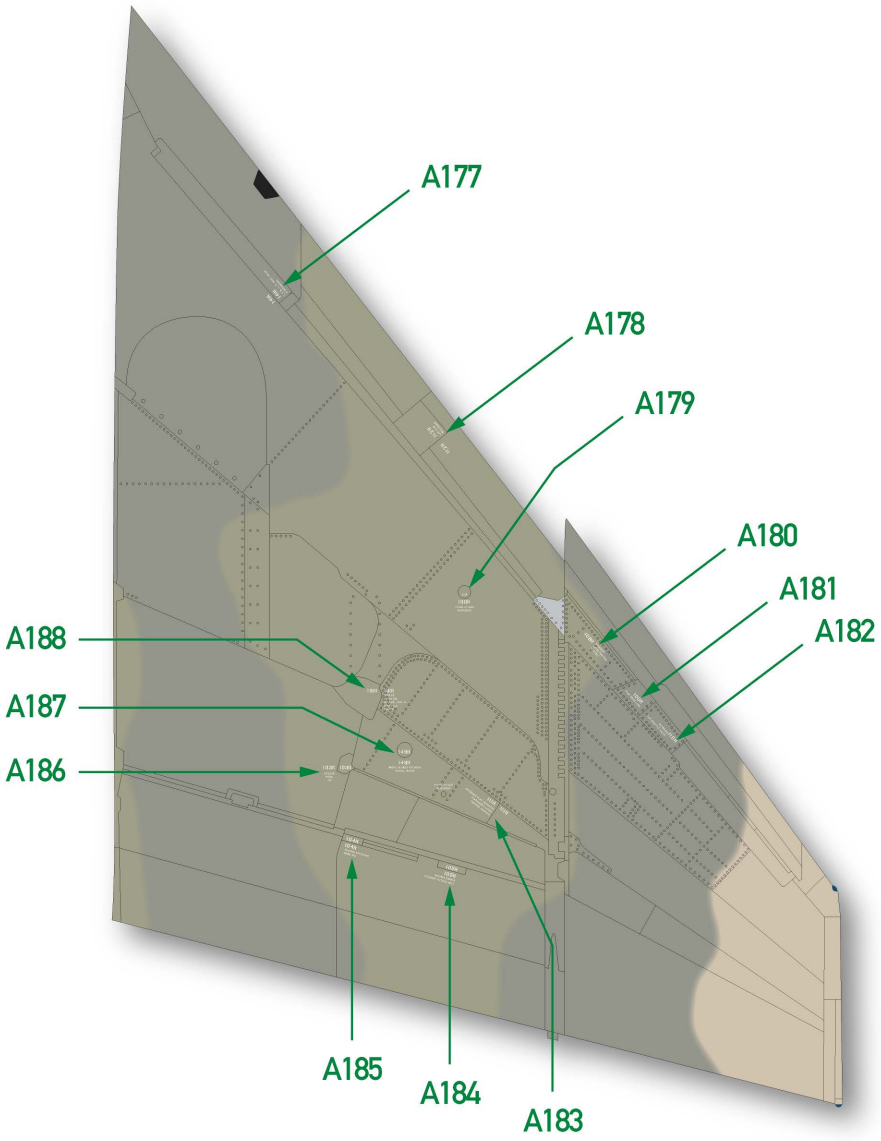
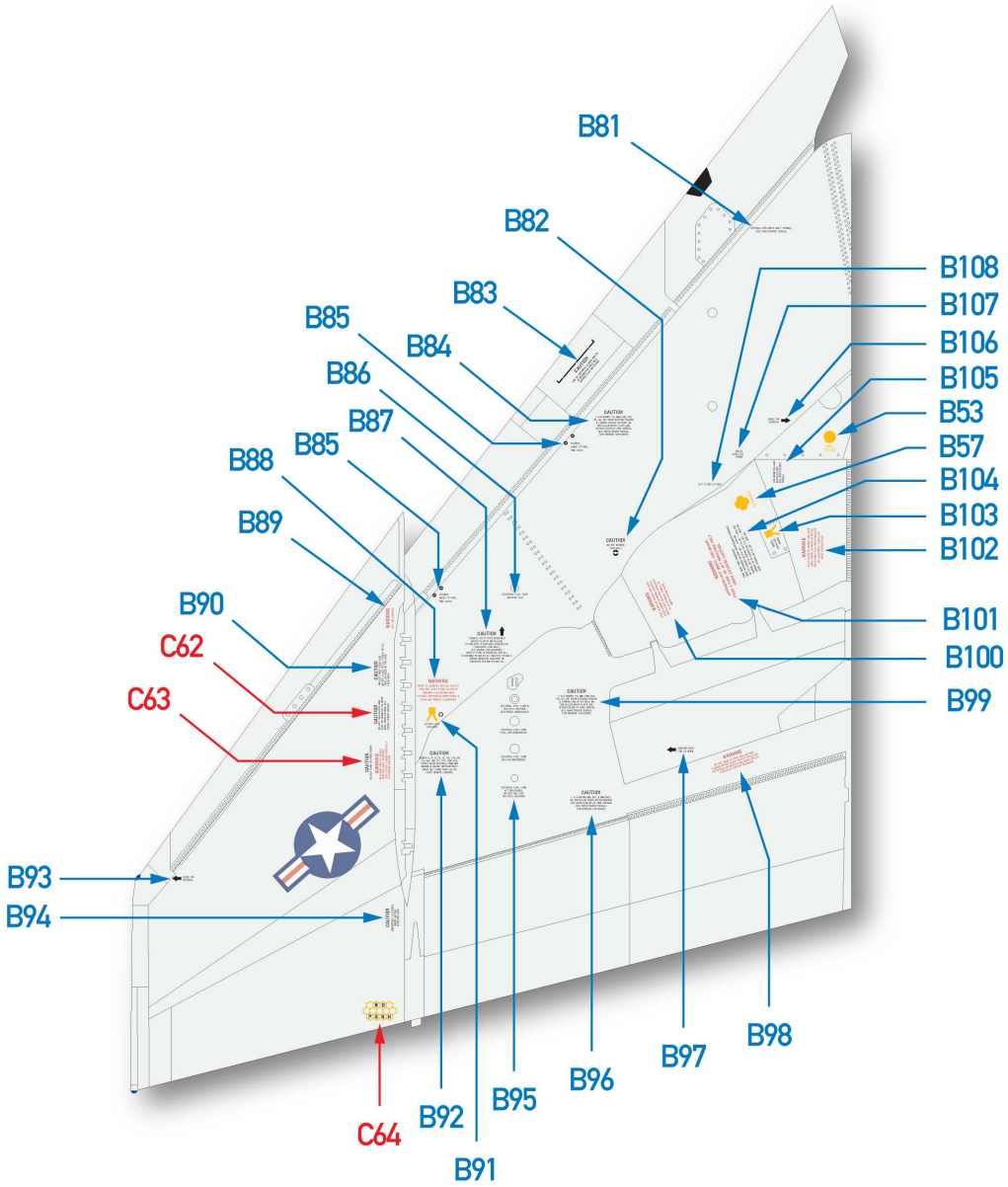
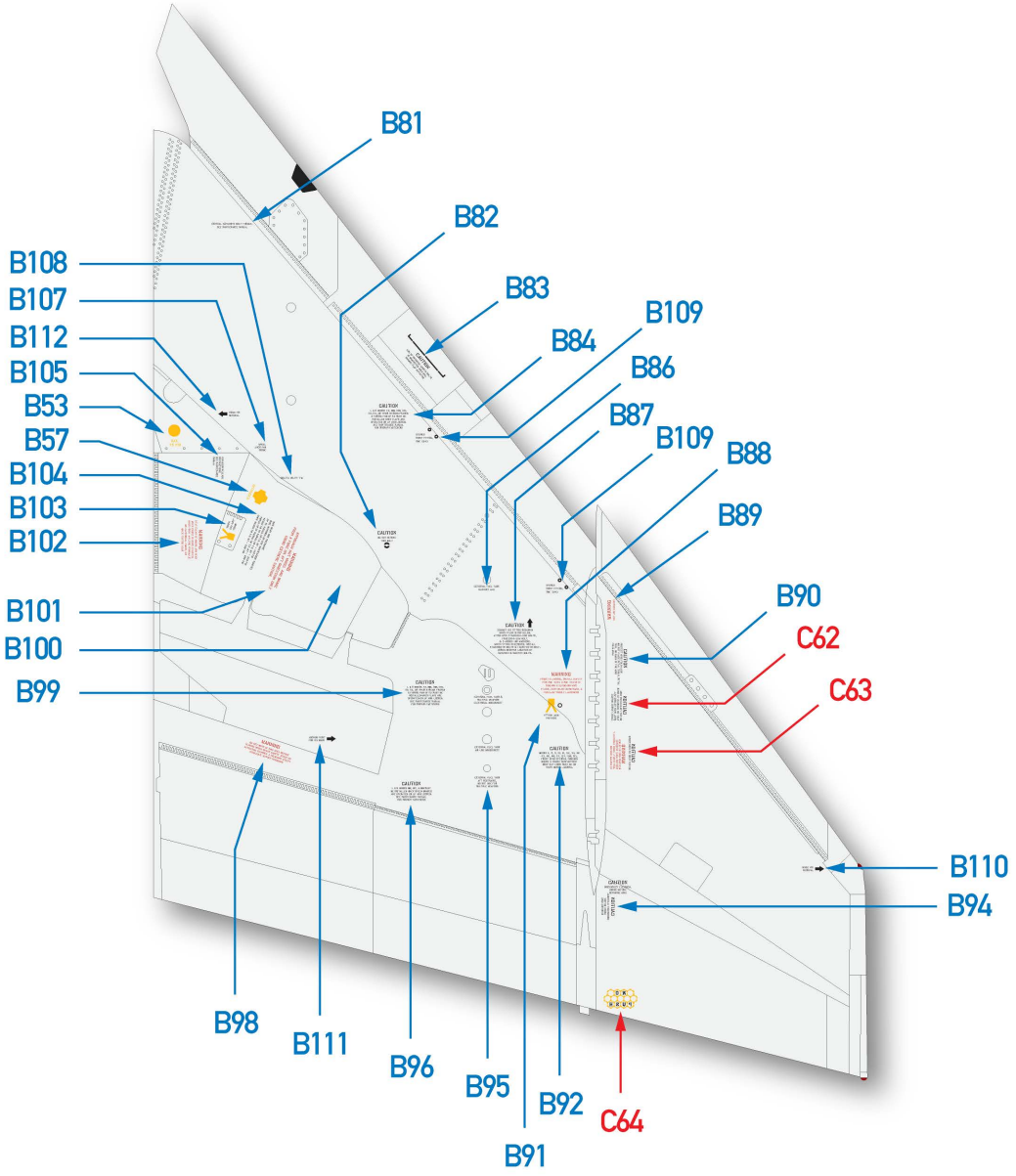
McDonnell Douglas F-4E
Access Door Markings - Unslatted Wing
Right Hand Upper Wing



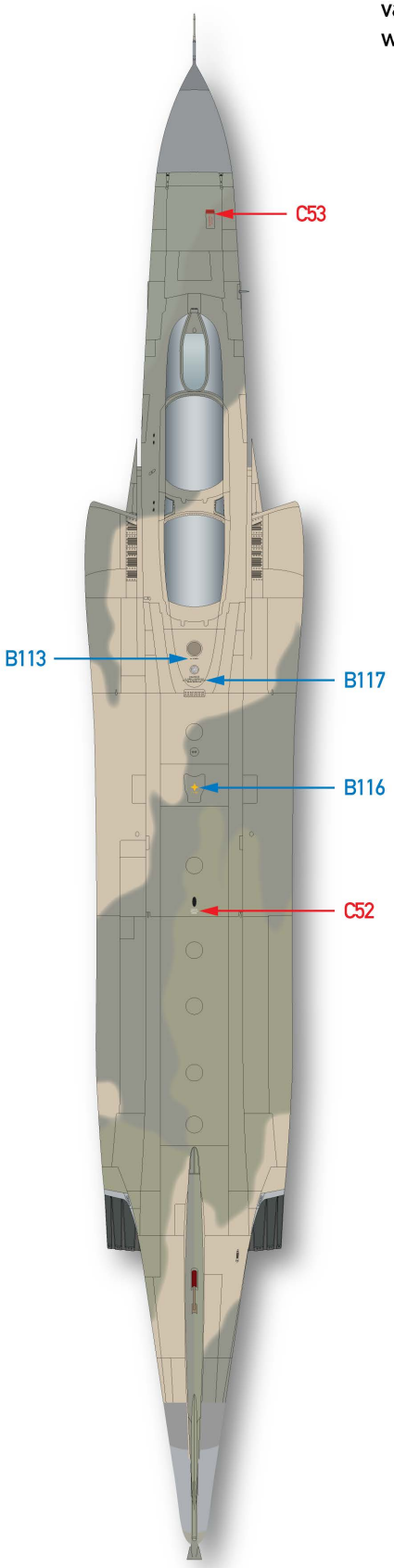
McDonnell Douglas F-4E
Instructional Markings - Unslatted Wing
Right Hand Lower Wing



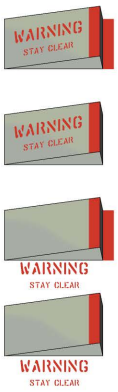
McDonnell Douglas F-4E
Instructional Markings - Unslatted Wing
Left Hand Lower Wing



McDonnell Douglas F-4E
Instructional Markings
Upper Fuselage



Gun gas purge intake door variations in application of warning marking C53



McDonnell Douglas F-4E

Instructional Markings - Unslatted Wing

Left Hand Upper Wing & Horizontal Stabilator

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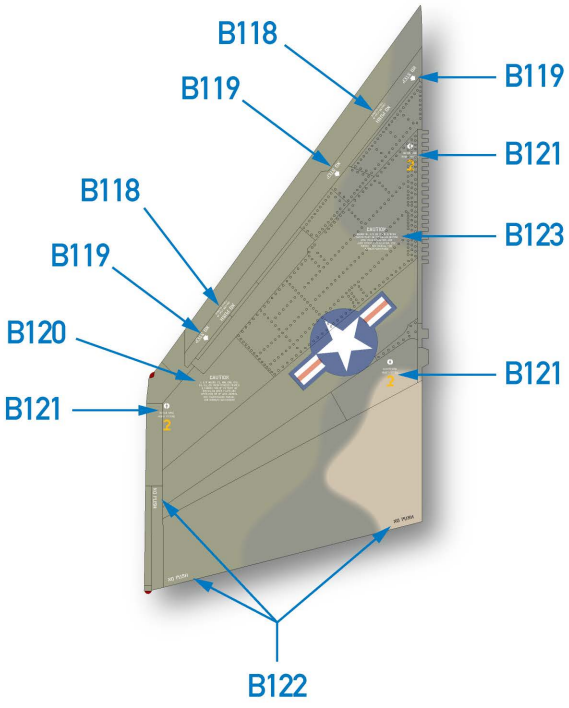
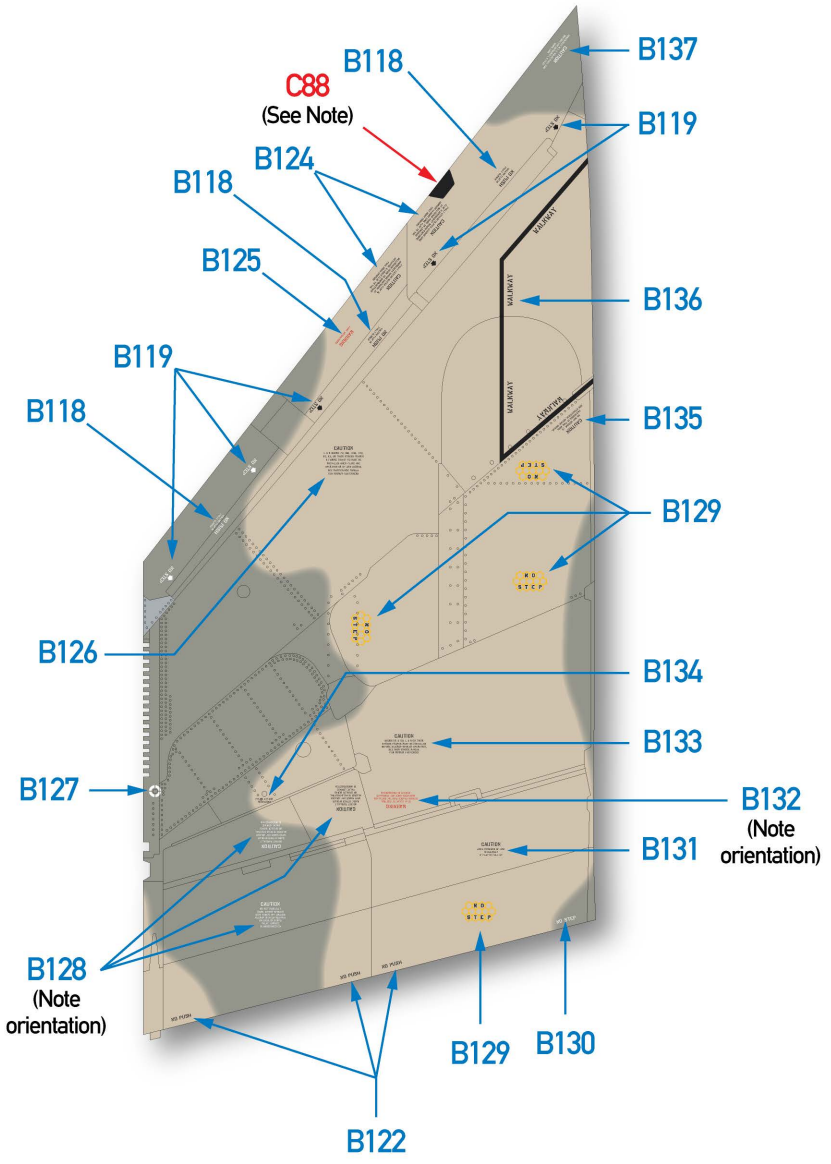
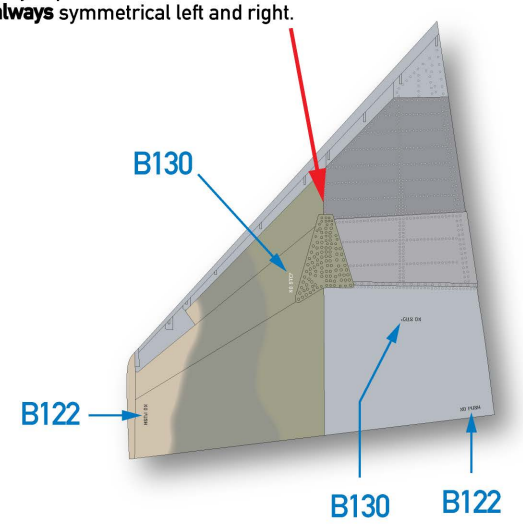




Between 1974 and 1983, if present, the arrowhead shaped doubler plates on the horizontal stabs were **only** on the upper surfaces. After 1983 they could be found on the top only, bottom only, top and bottom, or absent - but **always** symmetrical left and right.



Notes:

B128/B132: Note the orientation of these items. Tops of letters face the trailing edge of the wing.

C88: Note the orientation of this item. Fitted on hard wing F-4Es 66-0352 and subsequent.

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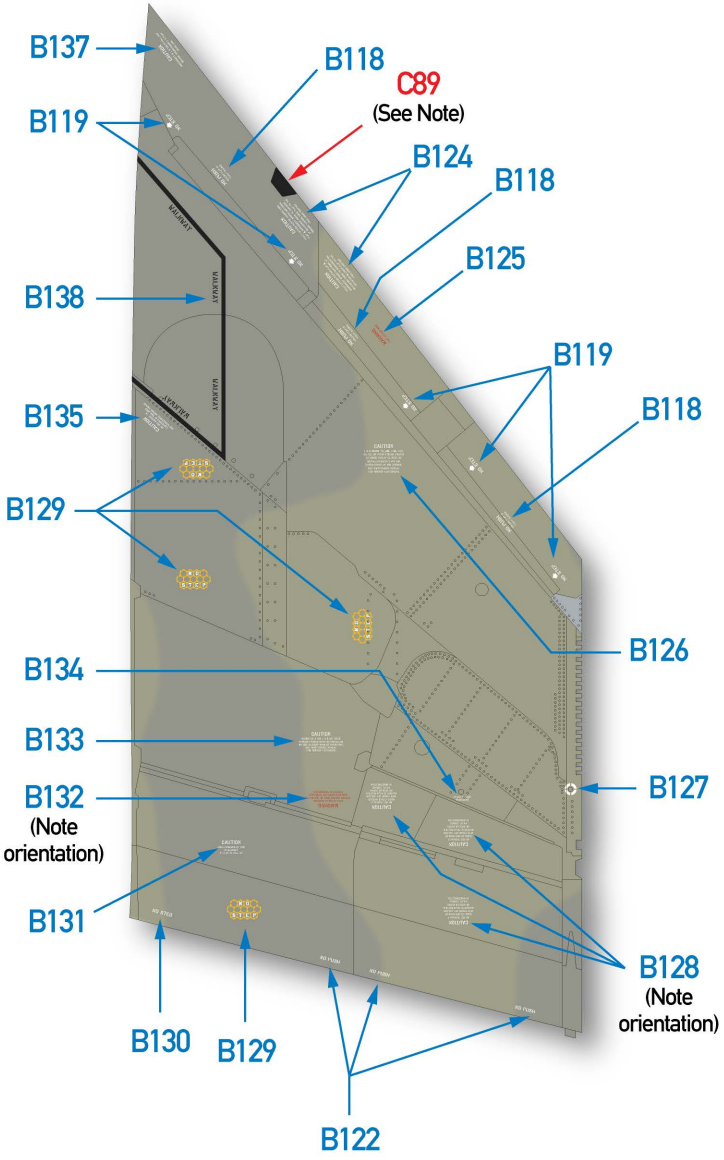
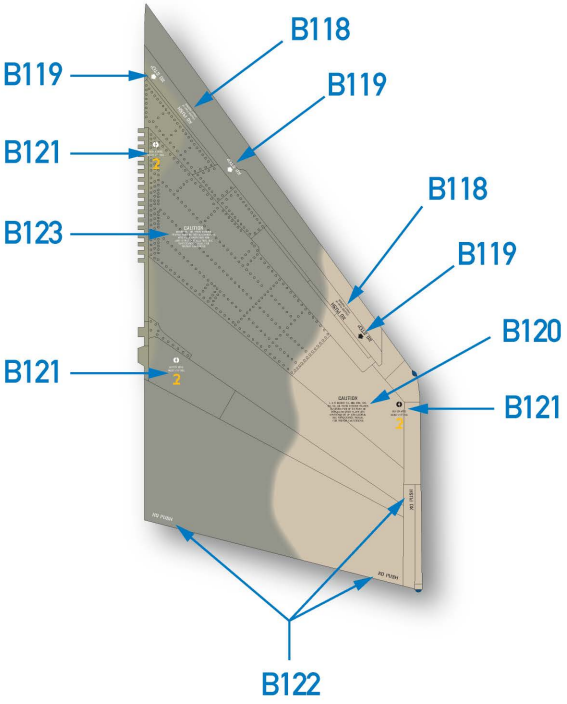
McDonnell Douglas F-4E
Instructional Markings - Unslatted Wing
Right Hand Upper Wing & Horizontal Stabilator





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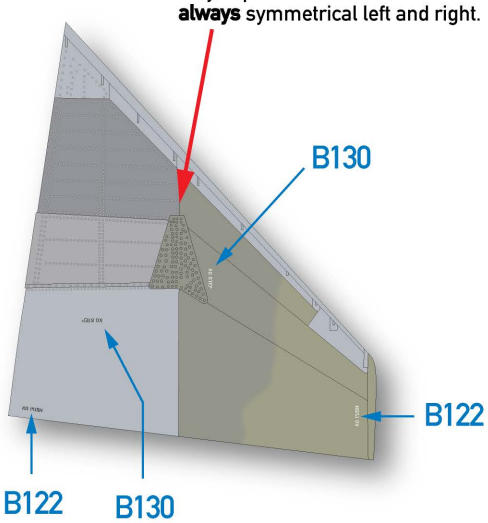

Notes:

B128/B132: Note the orientation of these items. Tops of letters face the trailing edge of the wing.

C88: Note the orientation of this item. Fitted on hard wing F-4Es 66-0352 and subsequent.

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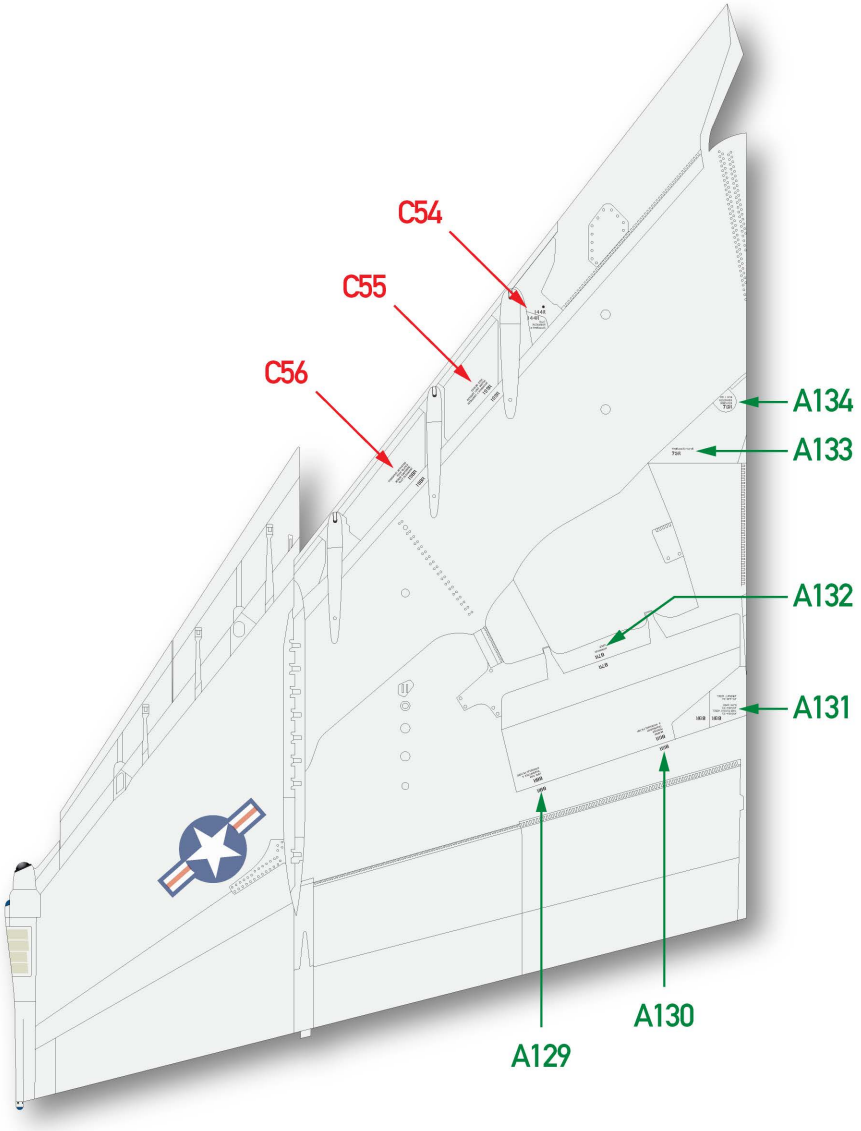
McDonnell Douglas F-4E
Access Door Markings - Slatted Wing
Right Hand Lower Wing



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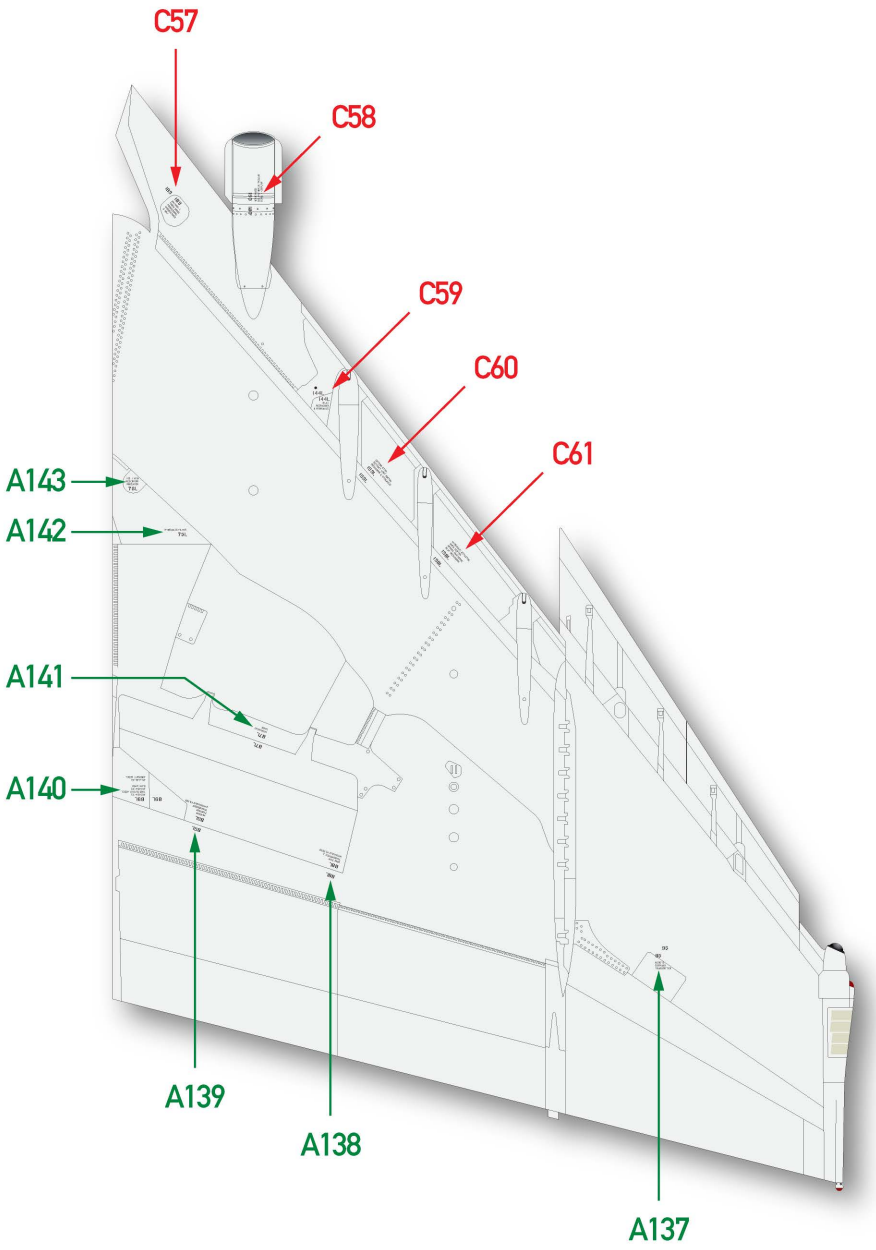
McDonnell Douglas F-4E
Access Door Markings - Slatted Wing
Left Hand Lower Wing



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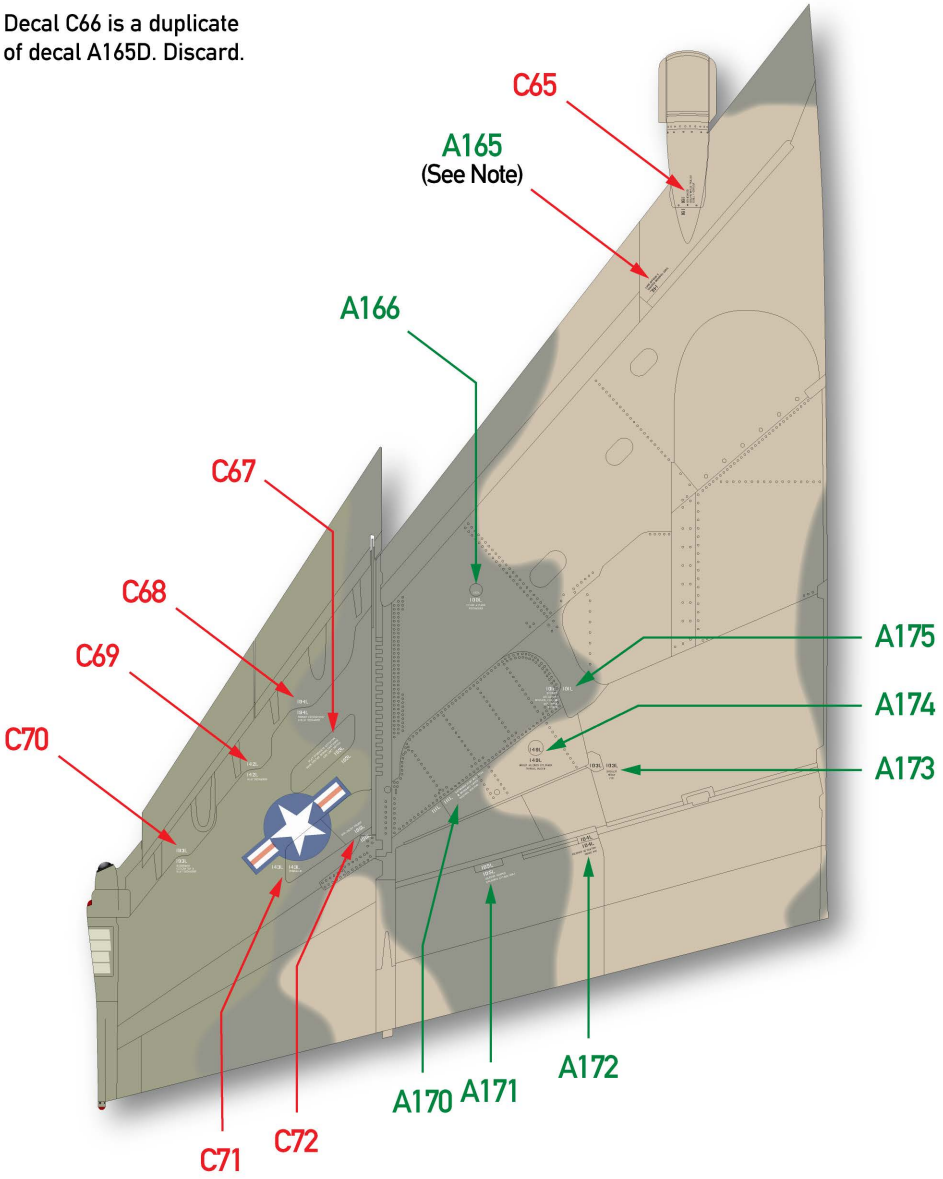
McDonnell Douglas F-4E
Access Door Markings - Slatted Wing
Left Hand Upper Wing

Notes:

A165D: 71-0237 - 72-0120
A165E: 72-0121 & subsequent

Decal C66 is a duplicate
of decal A165D. Discard.



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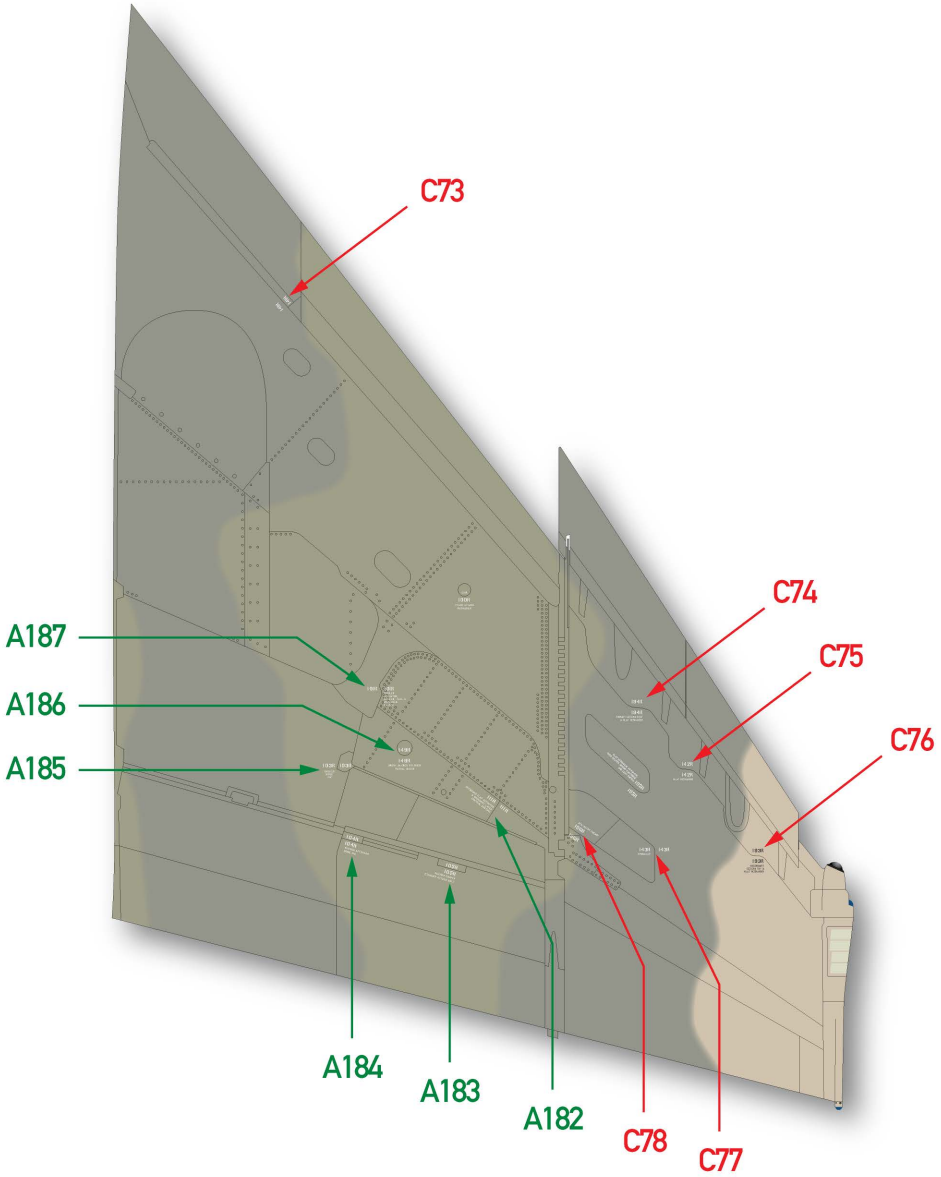
McDonnell Douglas F-4E
Access Door Markings - Slatted Wing
Right Hand Upper Wing



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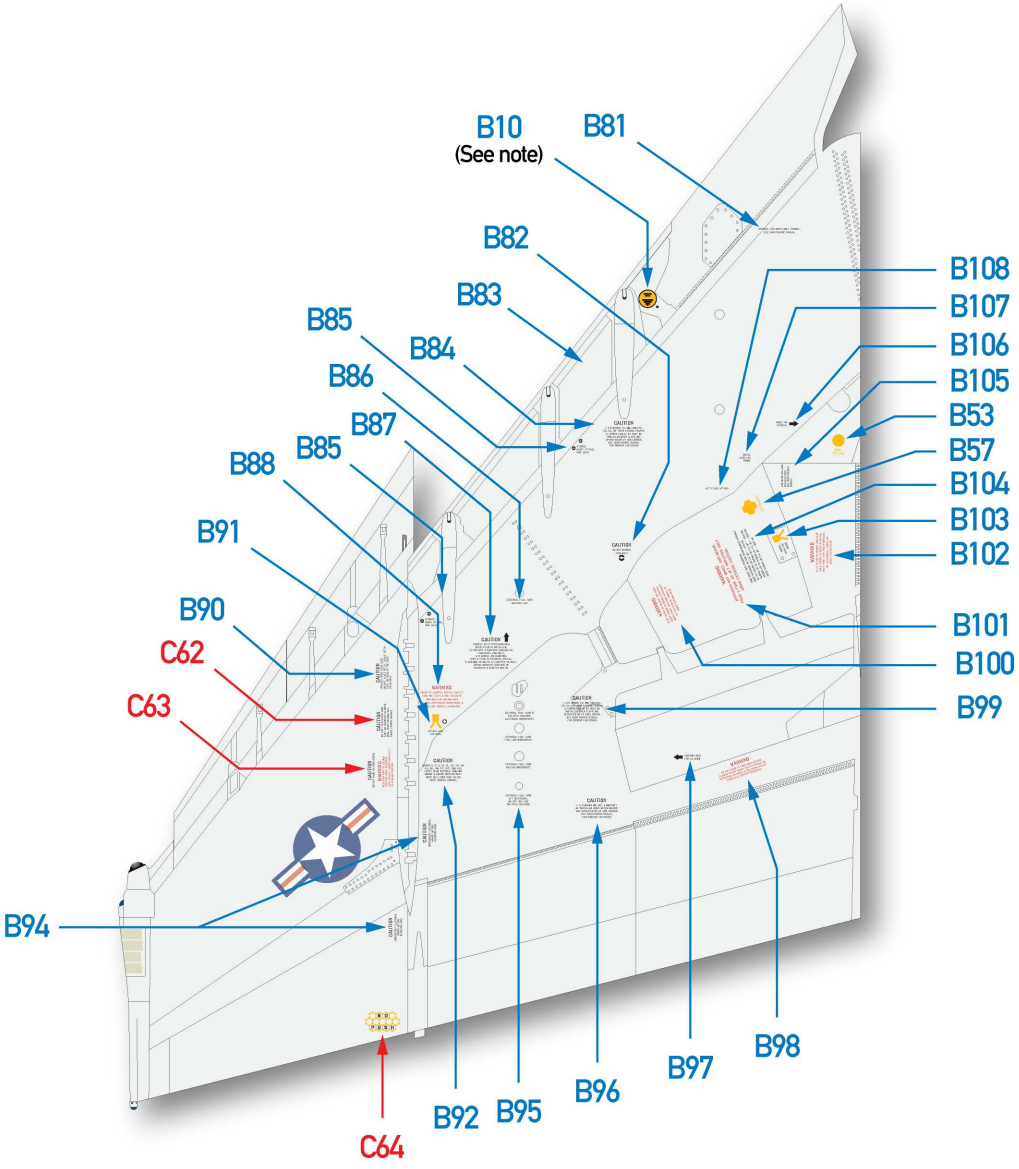
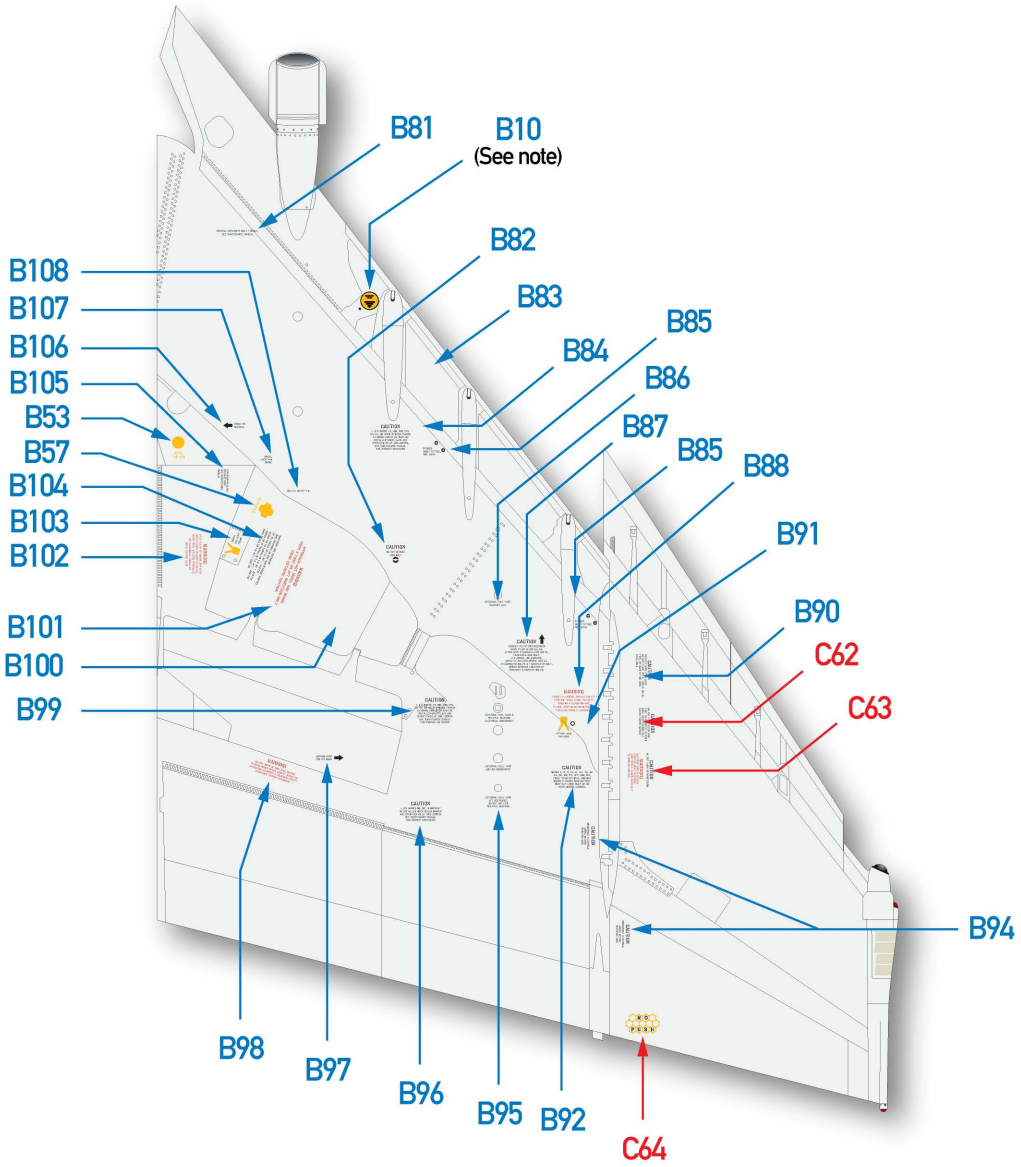
McDonnell Douglas F-4E
Instructional Markings - Slatted Wing
Right Hand Lower Wing



Note:

B10: There were many variations in the style of this marking, and different styles could be mixed on the same airframe at any given time. Choose from among the different variants provided for your subject.

McDonnell Douglas F-4E
Instructional Markings - Slatted Wing
Left Hand Lower Wing



Note:

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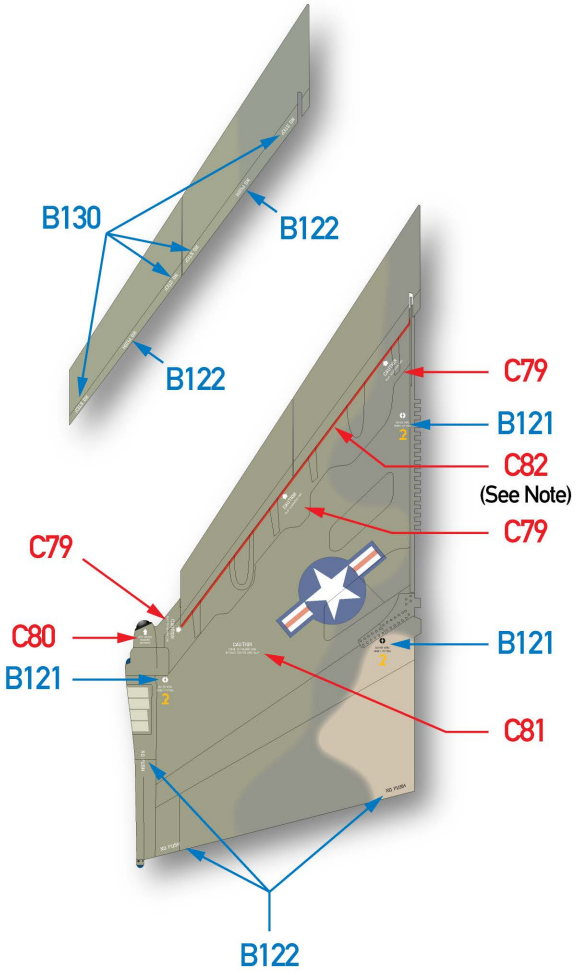
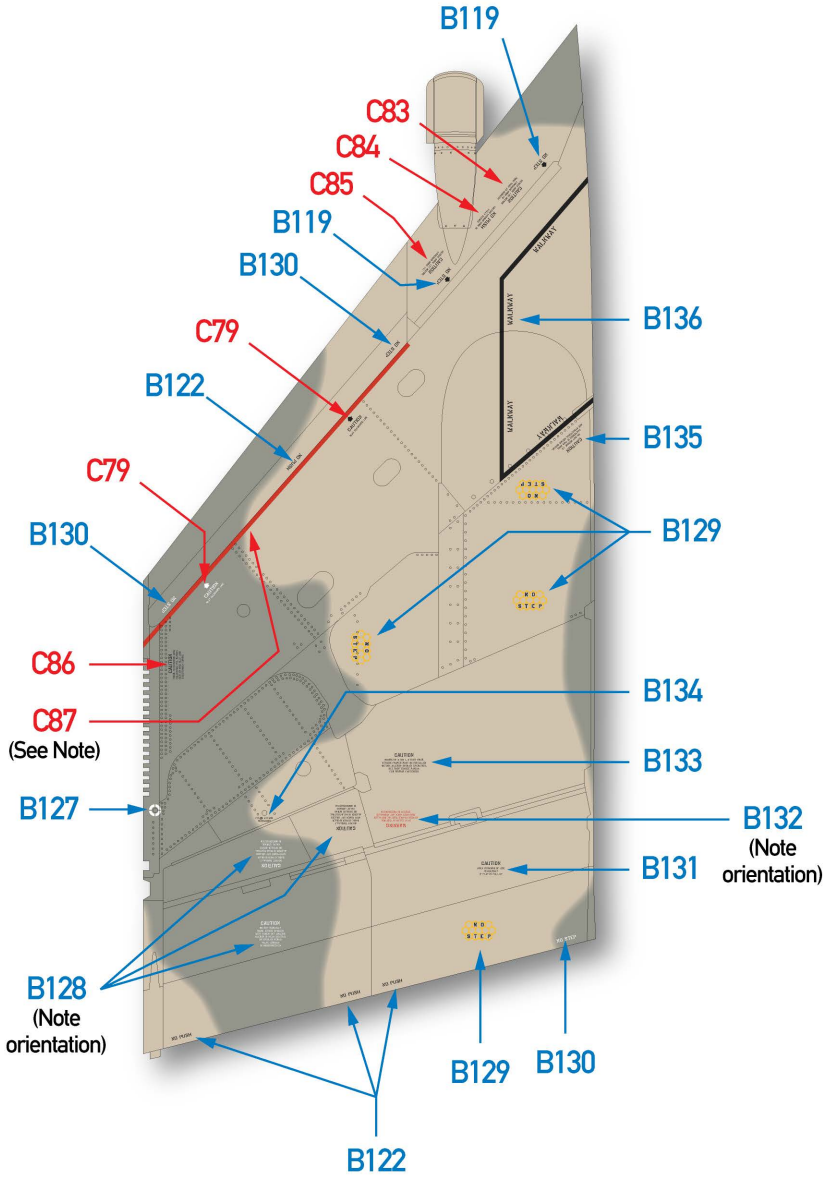
McDonnell Douglas F-4E
Instructional Markings - Slatted Wing
Left Hand Upper Wing & Horizontal Stabilator

Outboard slat upper surface
(right side markings identical)





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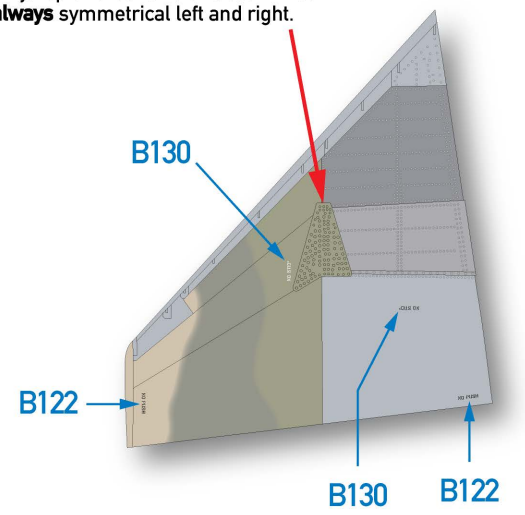

Notes:

B128 & B132: Note orientation of these items. Top is toward the trailing edge.

C82: Red warning line on upper wing surface is centered along aft edge of retracted slat such that only approximately 1/2 of its width is visible from directly above when the outboard slat is in the retracted position. Extra length is provided, trim as shown.

C87: The warning stripe for the inboard slat is applied directly against the trailing edge of the slat on the upper wing surface (not on the slat itself). Extra length is provided, trim as shown.

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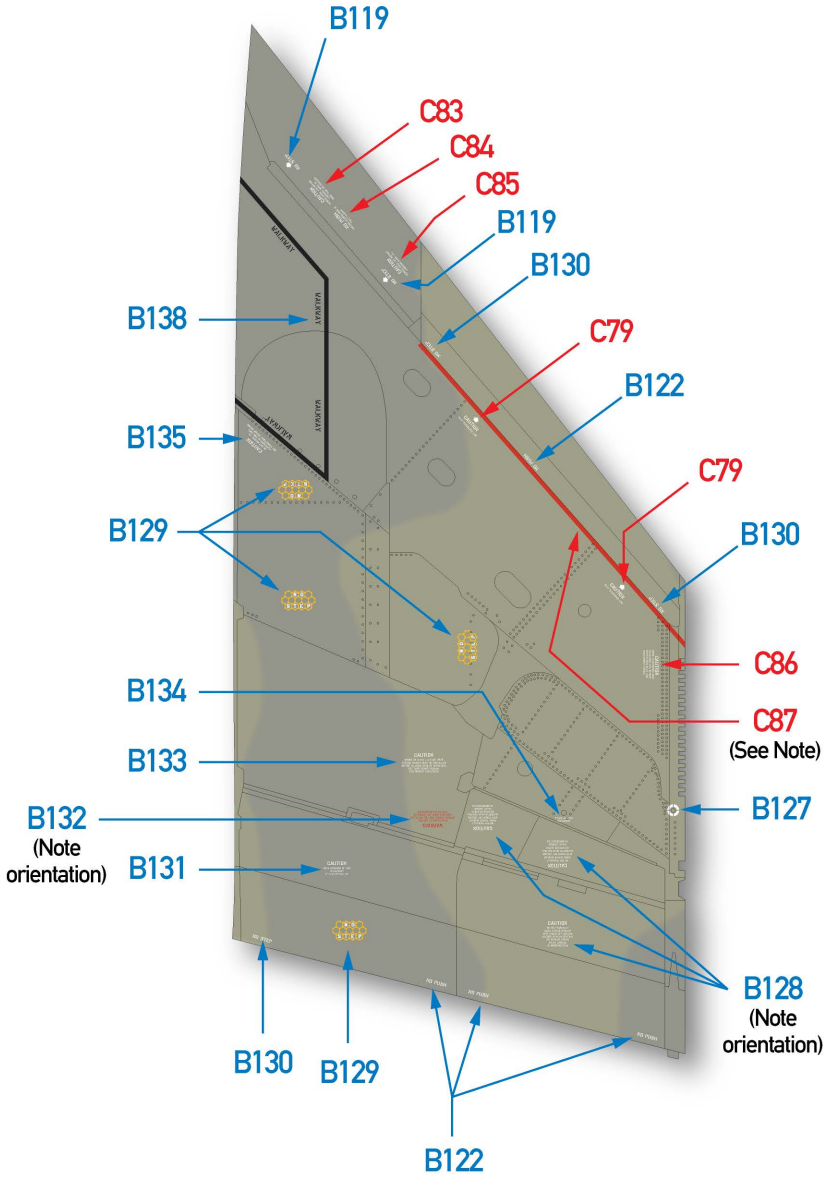
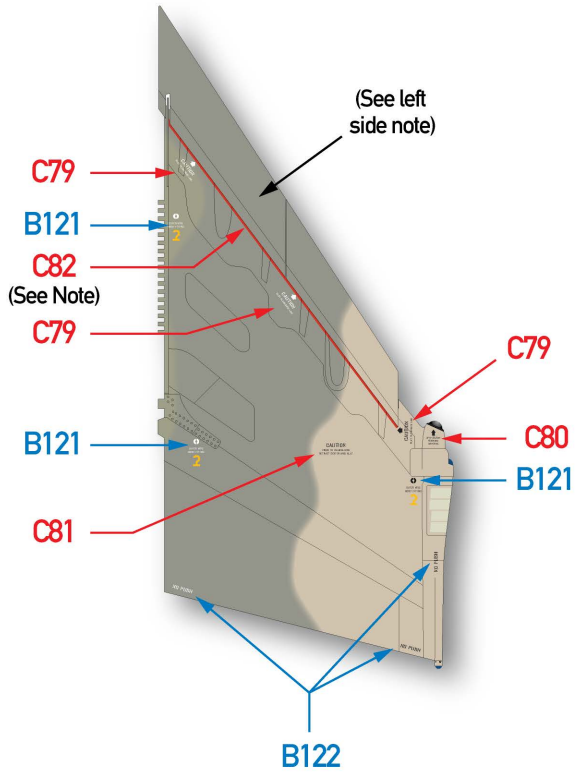
McDonnell Douglas F-4E
Instructional Markings - Slatted Wing
Right Hand Upper Wing & Horizontal Stabilator





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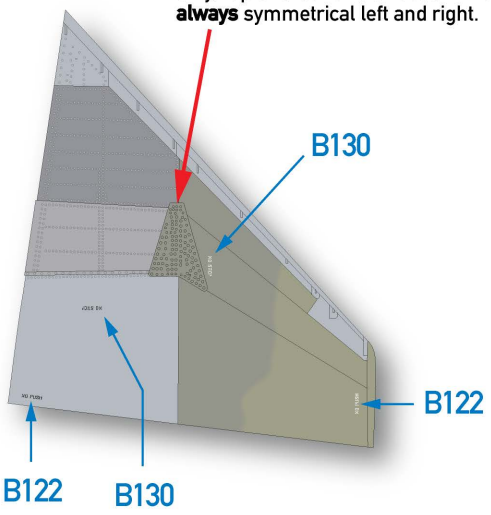

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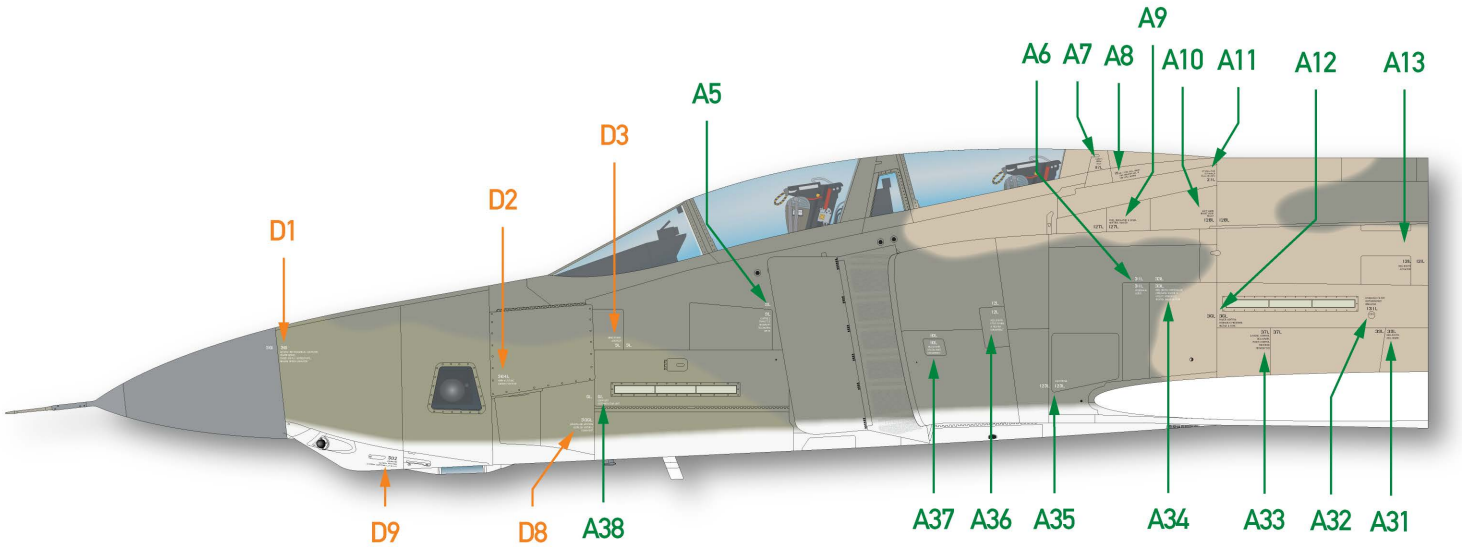
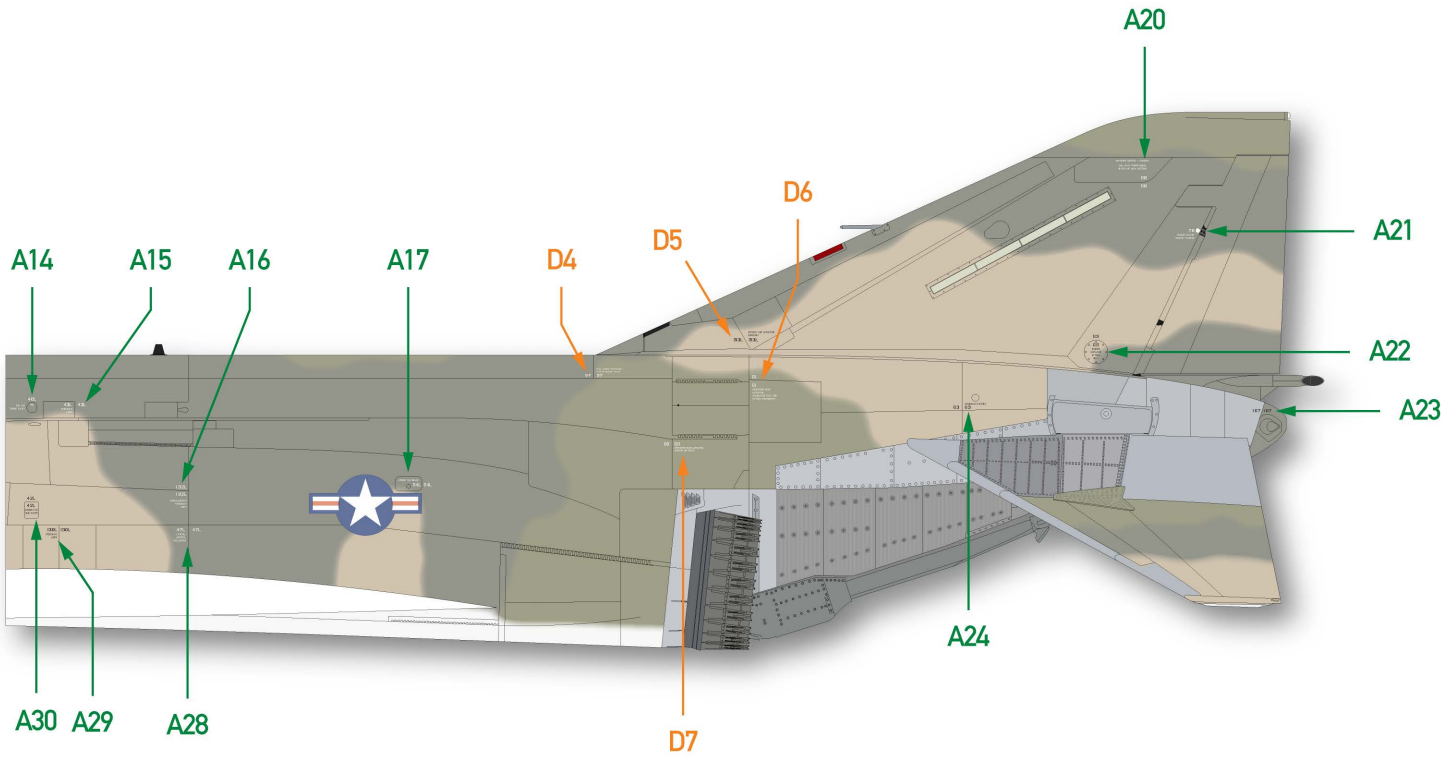
McDonnell Douglas RF-4C/E
Access Door Markings
Left Hand Fuselage





Note:

See notes at the end of the instructions regarding the arrowhead shaped doubler plates on the horizontal stabs. The time period of your subject will dictate which of these, if any, are appropriate.

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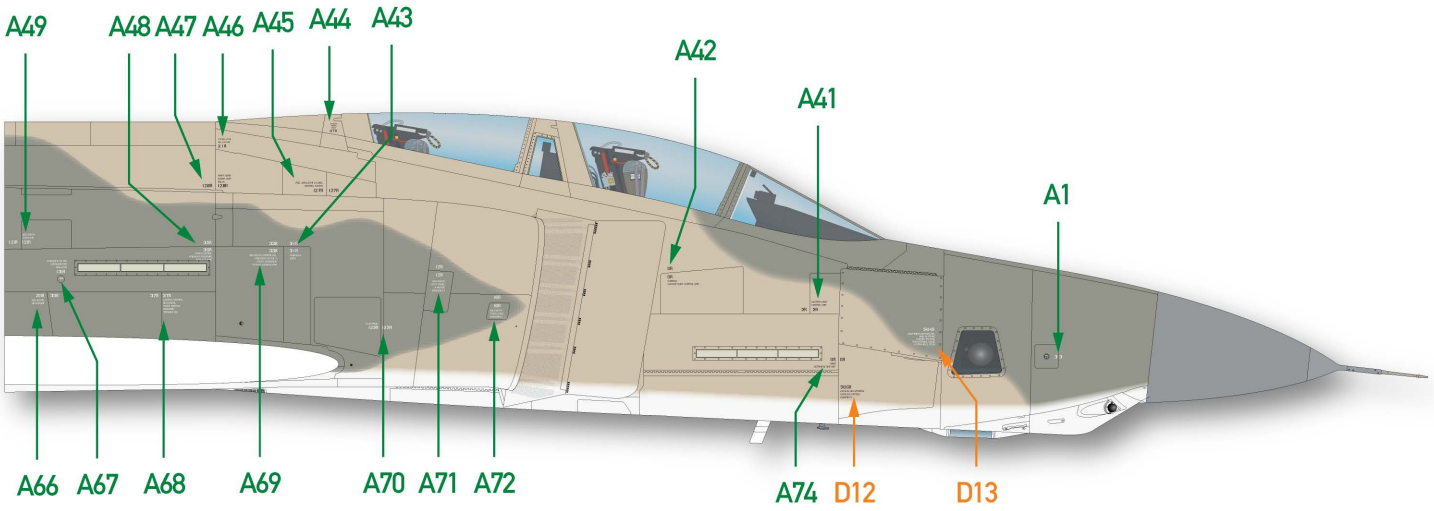
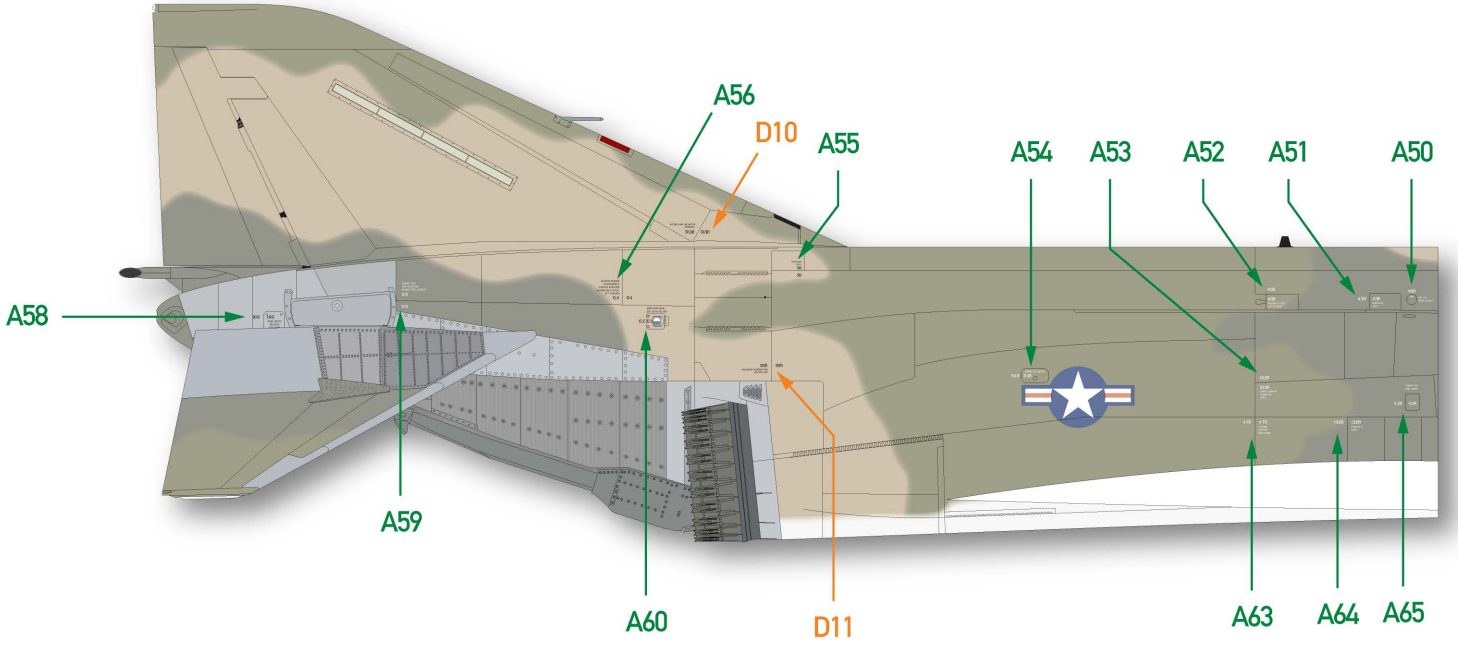
McDonnell Douglas RF-4C/E
Access Door Markings
Right Hand Fuselage





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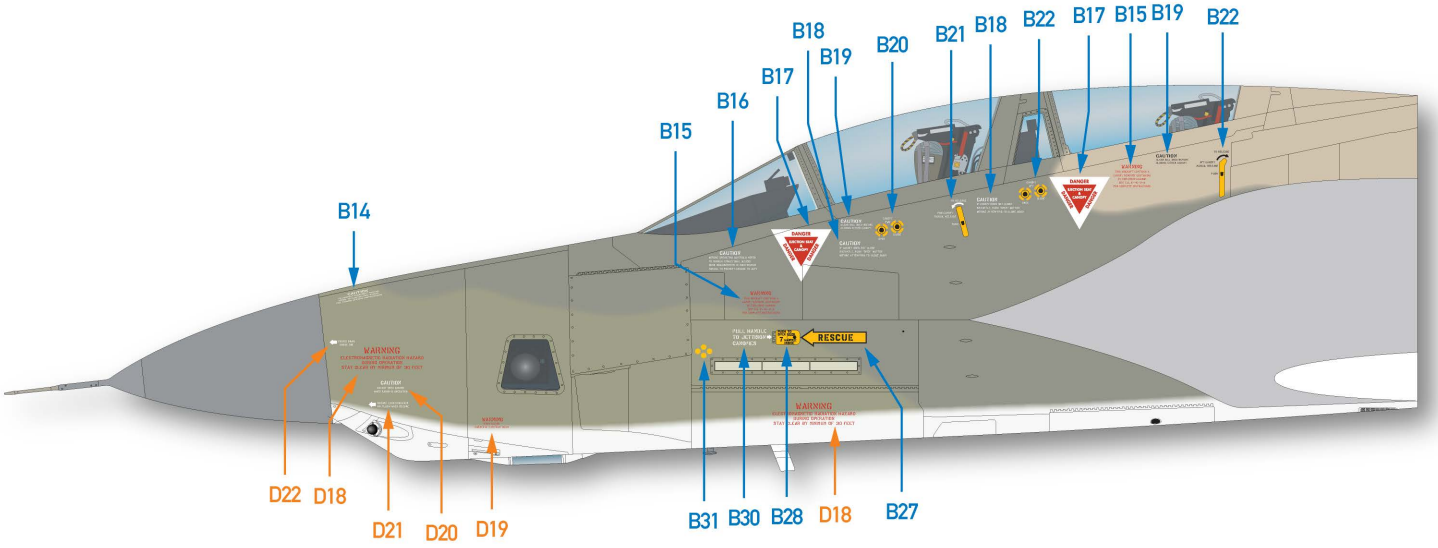
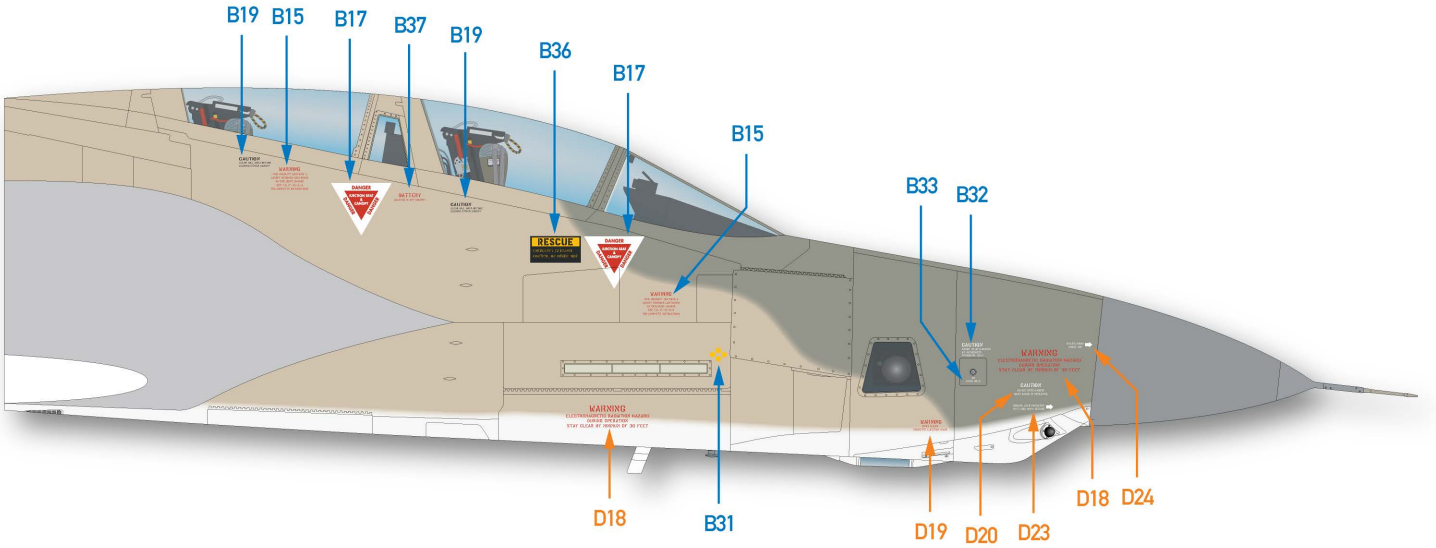
McDonnell Douglas RF-4C/E
Instructional Markings
Forward Fuselage





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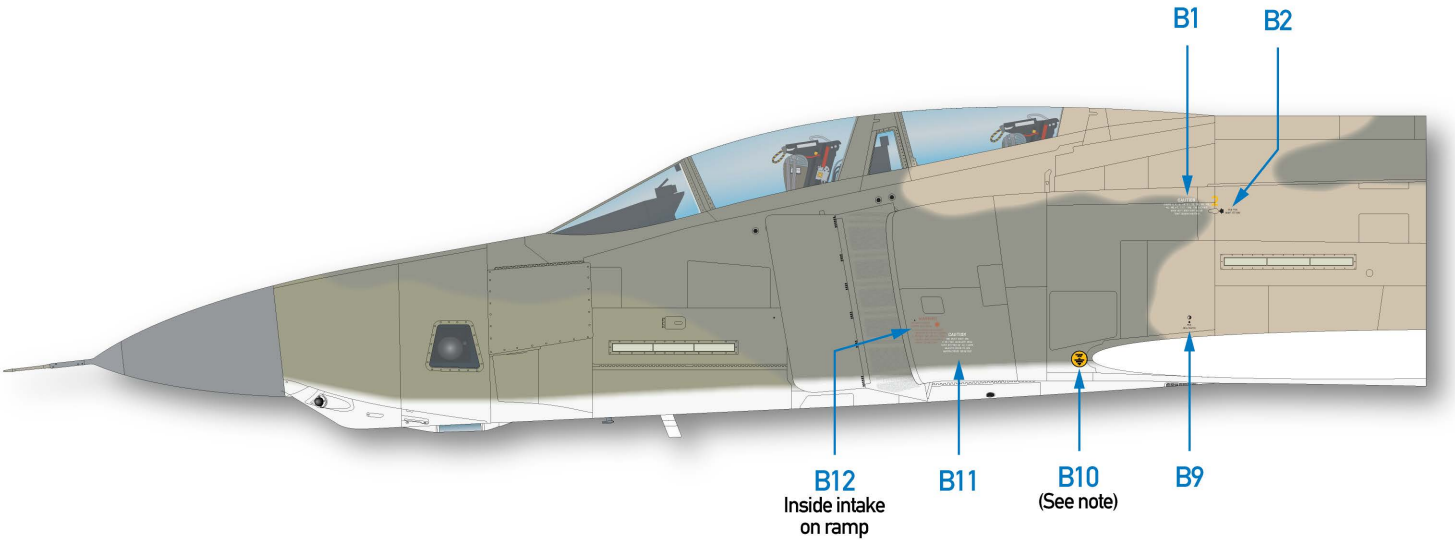
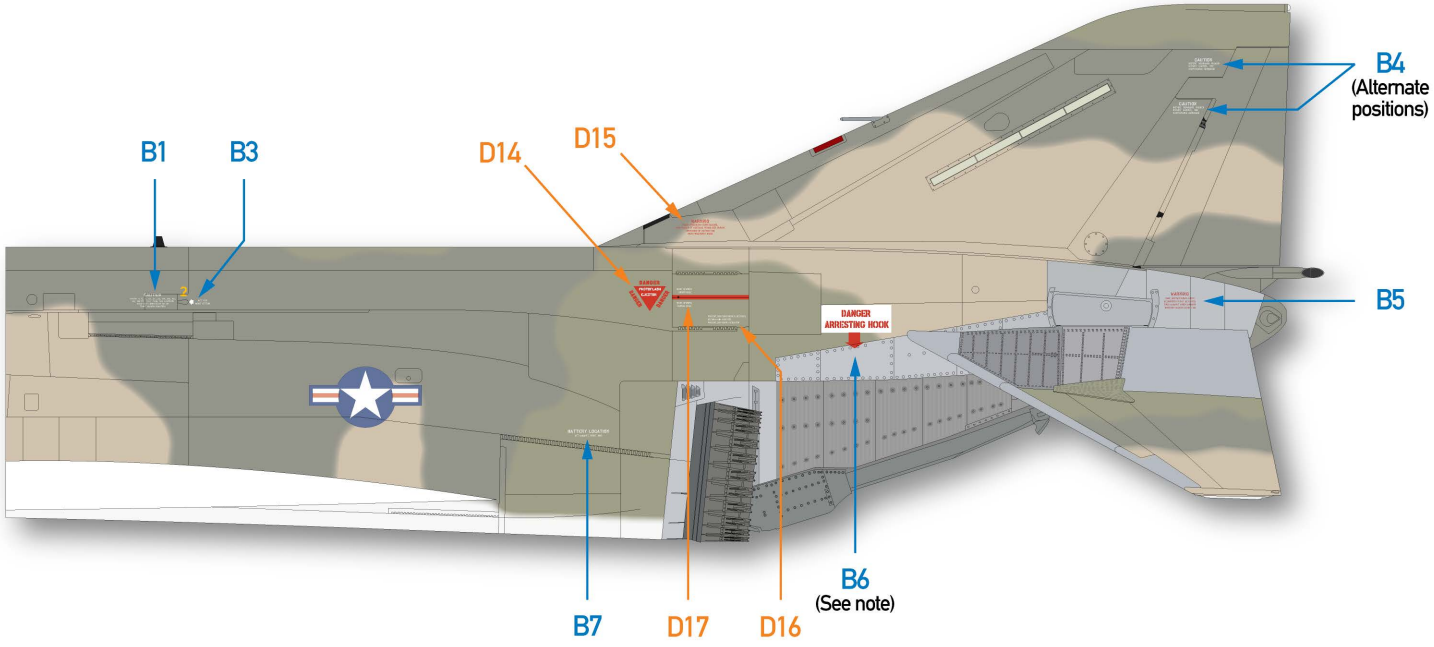
McDonnell Douglas RF-4C/E
Instructional Markings
Left Hand Fuselage





Notes:

B6: The tail hook warnings were applied in many variations, or not at all. We have provided a number of different versions, all taken from period photos. Choose the most appropriate version for your subject.

B10: This was not applied to early RF-4Cs (which lacked the grounding plug in this position). It was applied to later block aircraft, but we have been unable to determine precisely when it was first installed on the production line. The grounding plug was added to most earlier aircraft during PDM in the 1970s.

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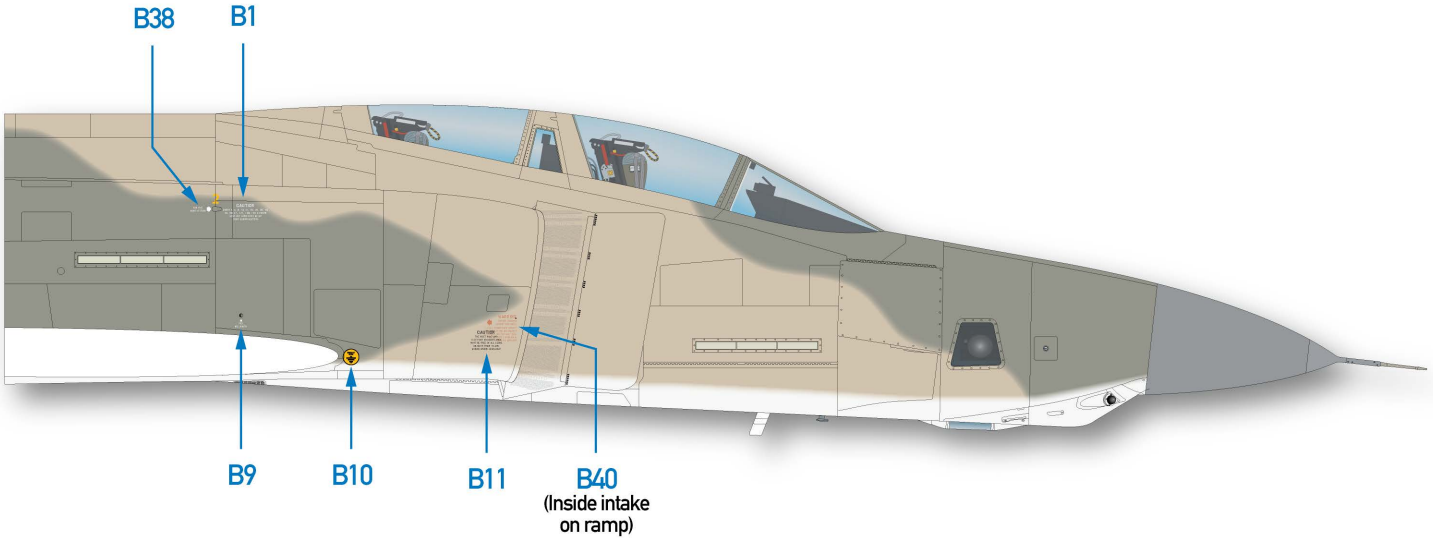
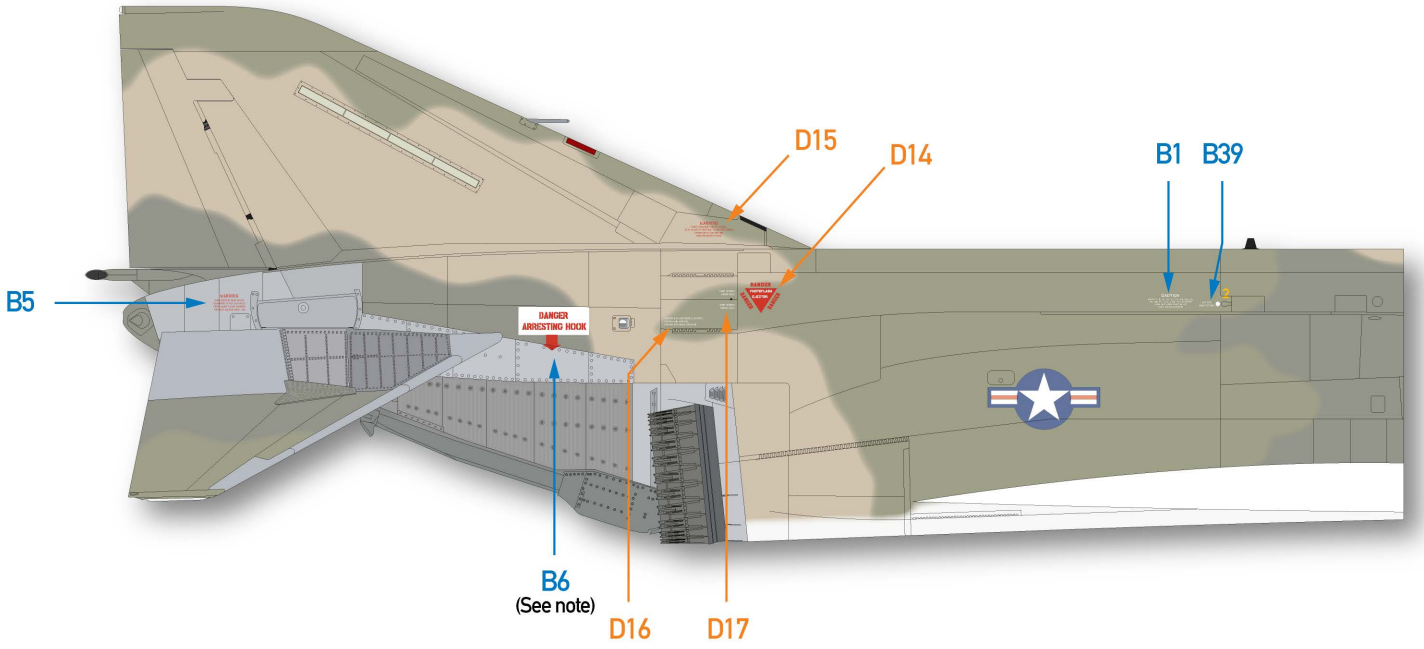
McDonnell Douglas RF-4C/E
Instructional Markings
Right Hand Fuselage





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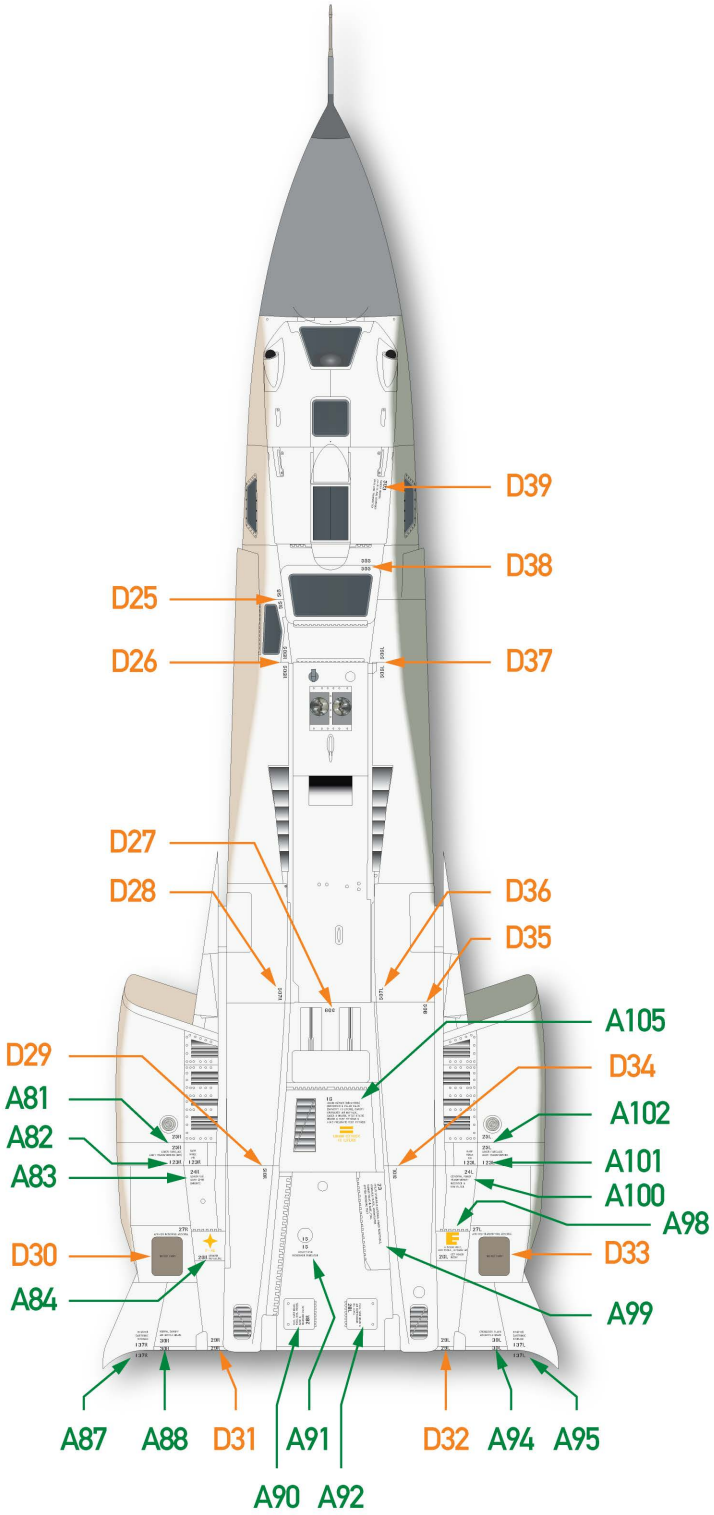
McDonnell Douglas RF-4C/E
Access Door Markings
Lower Forward Fuselage



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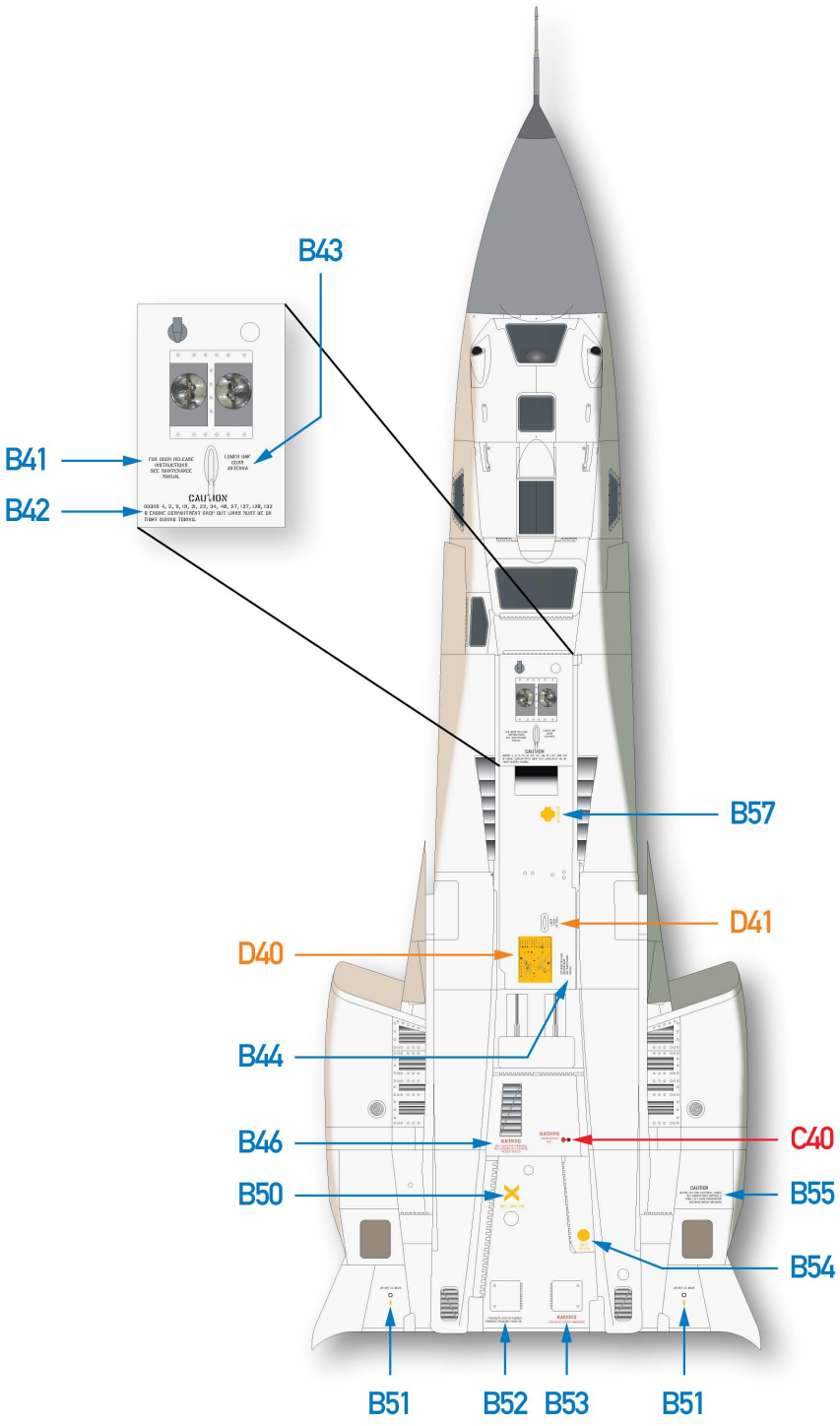
McDonnell Douglas RF-4C/E
Instructional Markings
Lower Forward Fuselage



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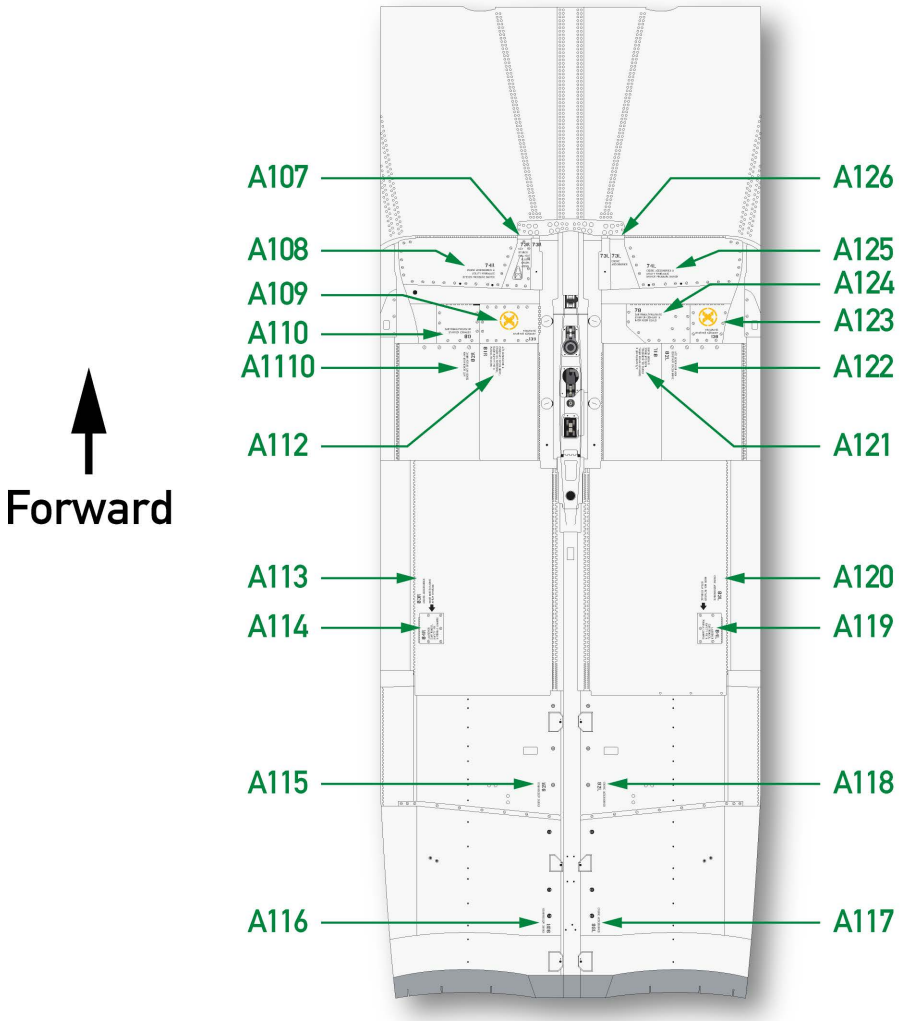
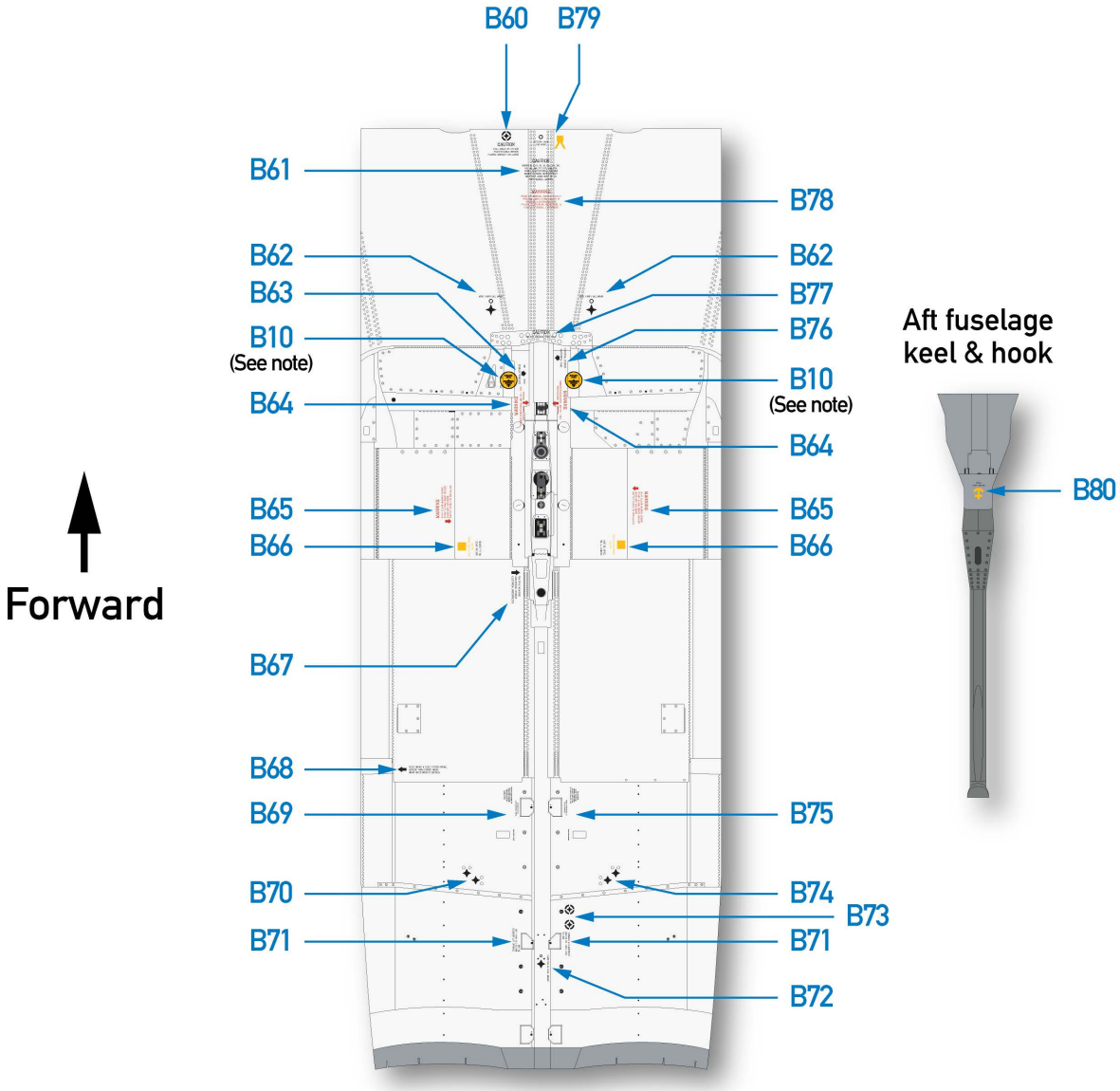
McDonnell Douglas RF-4C/E
Access Door Markings
Lower Aft Fuselage



McDonnell Douglas RF-4C/E
Instructional Markings
Lower Aft Fuselage



Note:

B10: There were many variations in the style of this marking, and different styles could be mixed on the same airframe at any given time. Choose from among the different variants provided for your subject.

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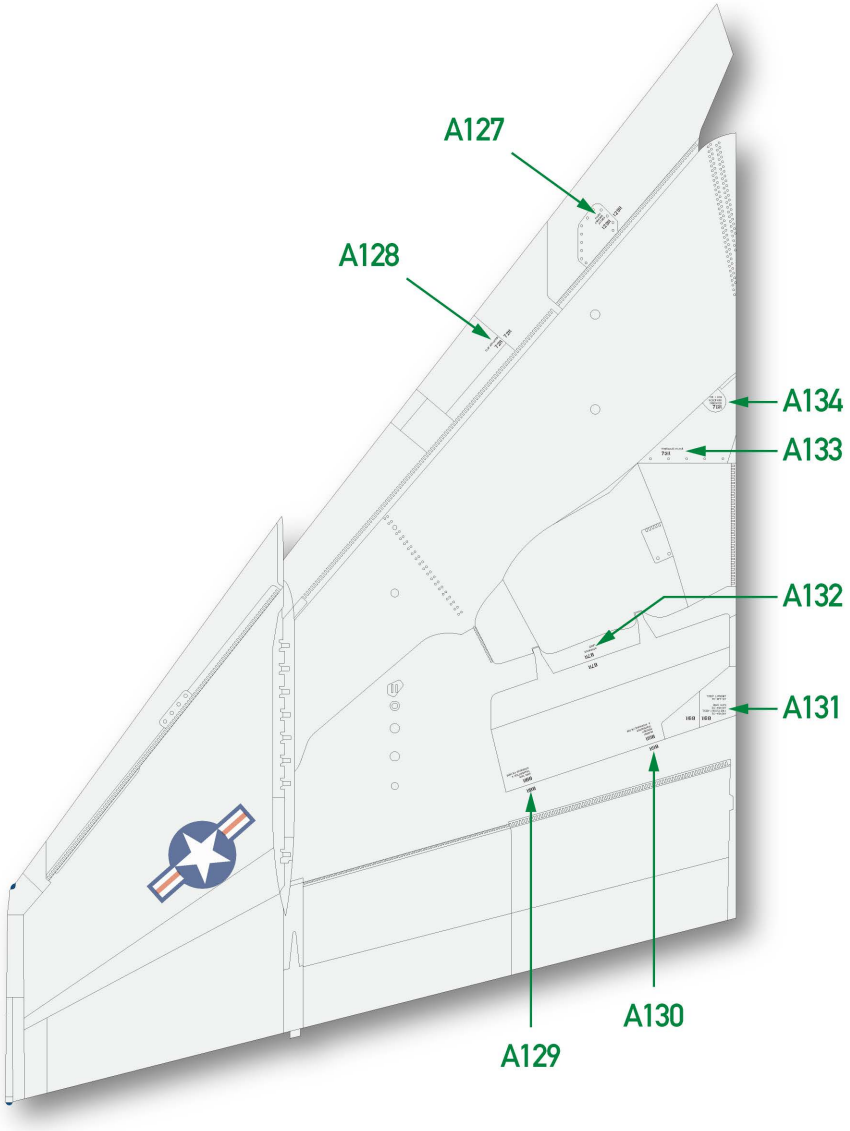
McDonnell Douglas RF-4C/E
Access Door Markings
Right Hand Lower Wing

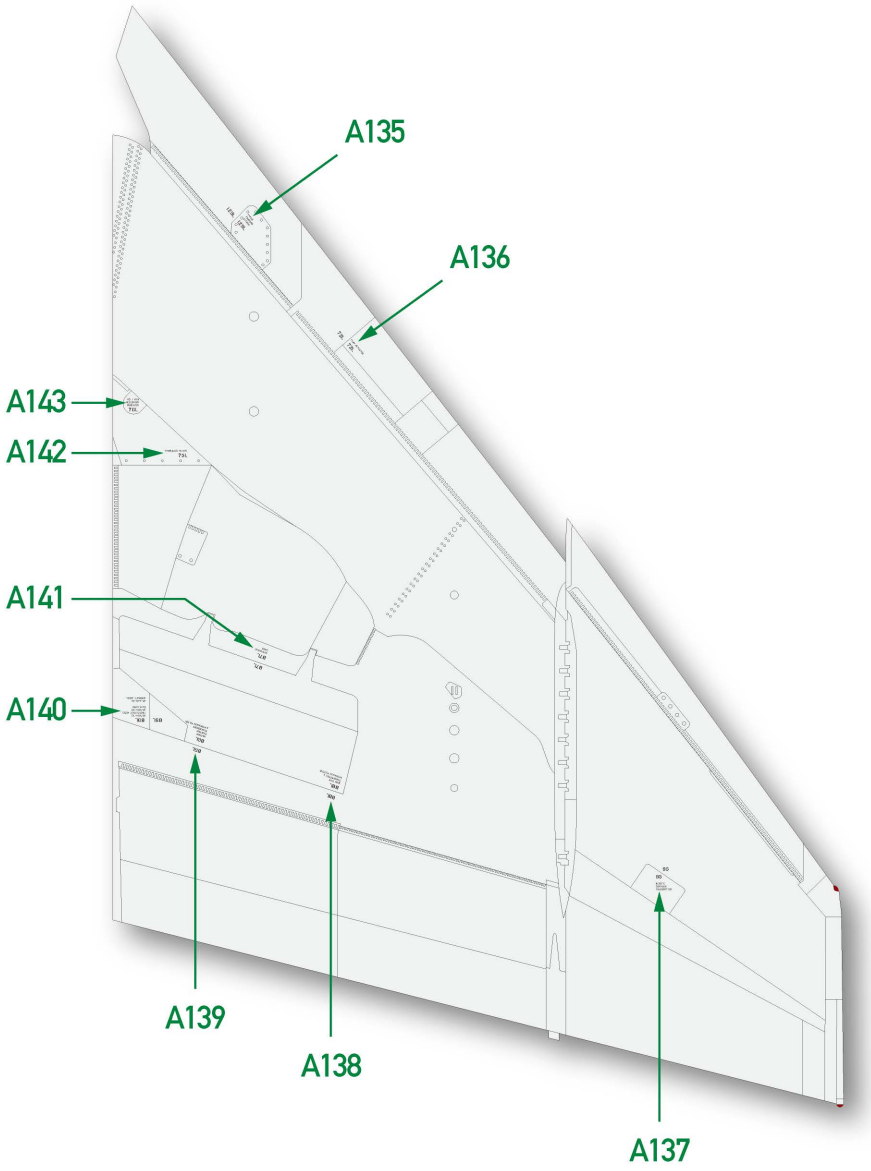


Note:

Decals A129, A130, and A132 are split on the decal so that you can apply the portions on the speed brake separately from the portion on the wing next to it.

McDonnell Douglas RF-4C/E

Access Door Markings
Left Hand Lower Wing



Note:

Decals A138, A139, and A141 are split on the decal so that you can apply the portions on the speed brake separately from the portion on the wing next to it.

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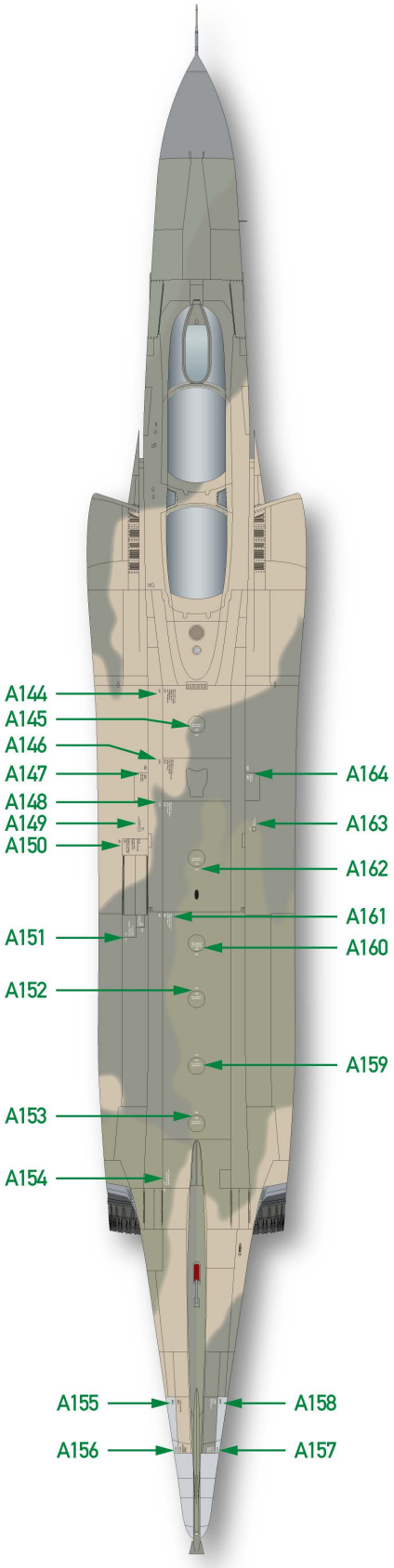
McDonnell Douglas RF-4C/E

Access Door Markings

Upper Fuselage



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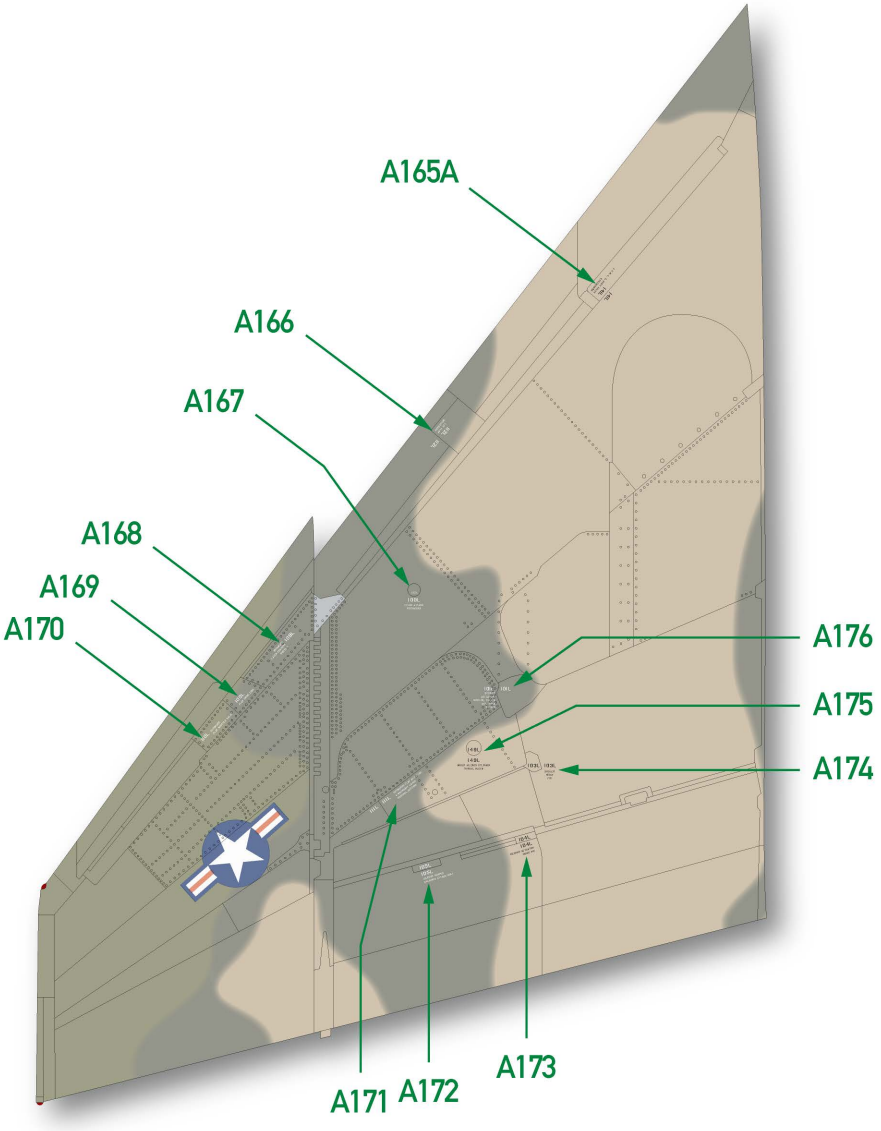
McDonnell Douglas RF-4C/E
Access Door Markings
Left Hand Upper Wing



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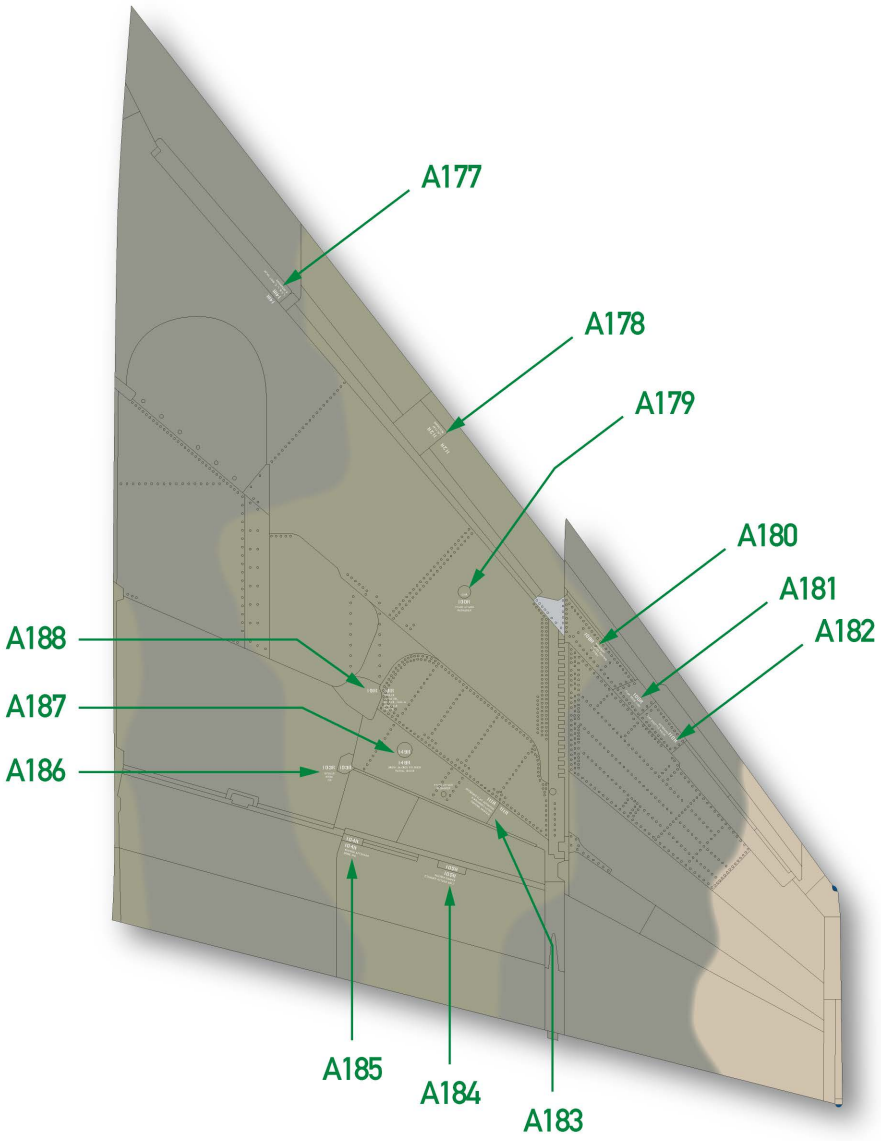
McDonnell Douglas RF-4C/E
Access Door Markings
Right Hand Upper Wing



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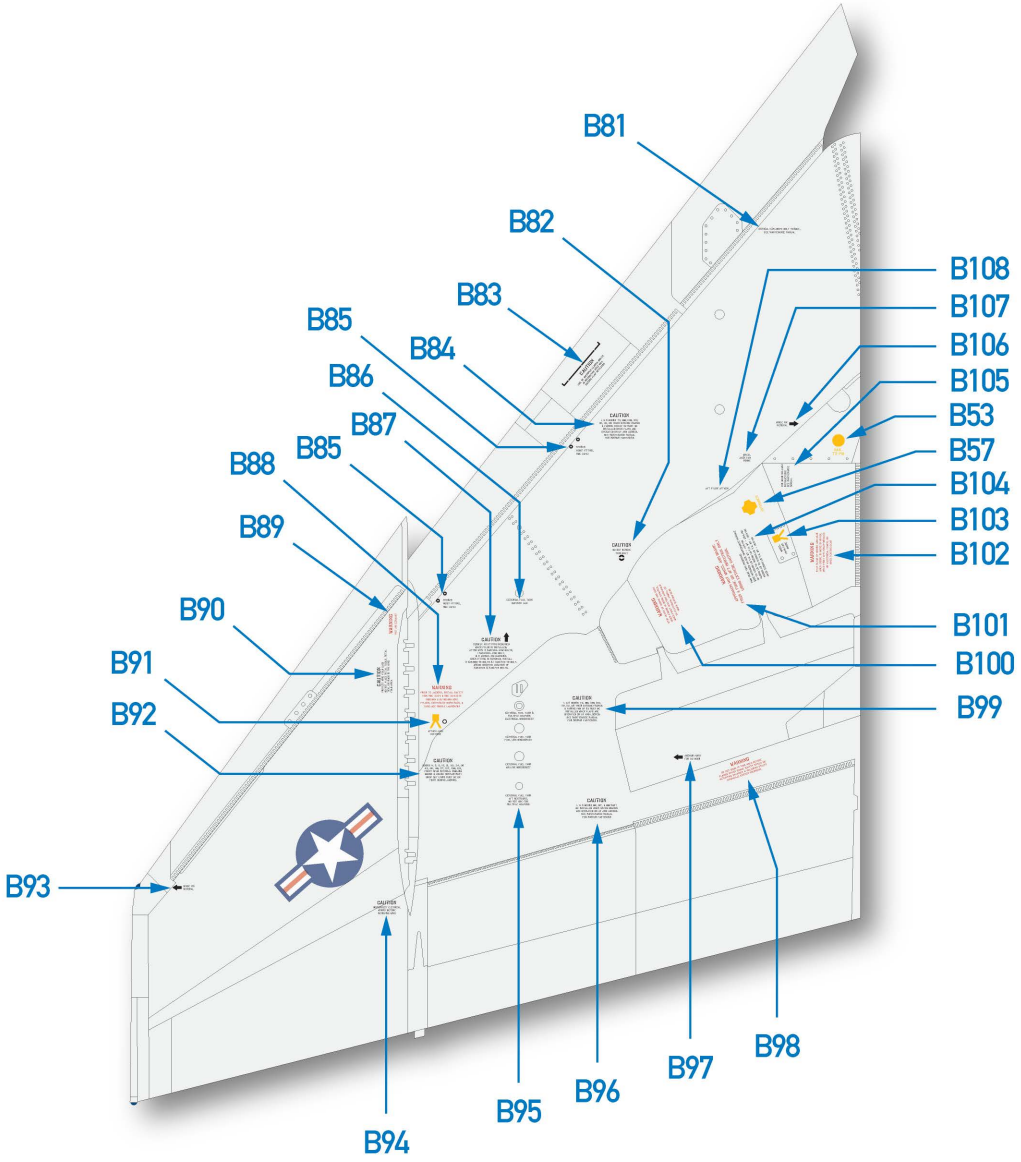
McDonnell Douglas RF-4C/E
Instructional Markings
Right Hand Lower Wing



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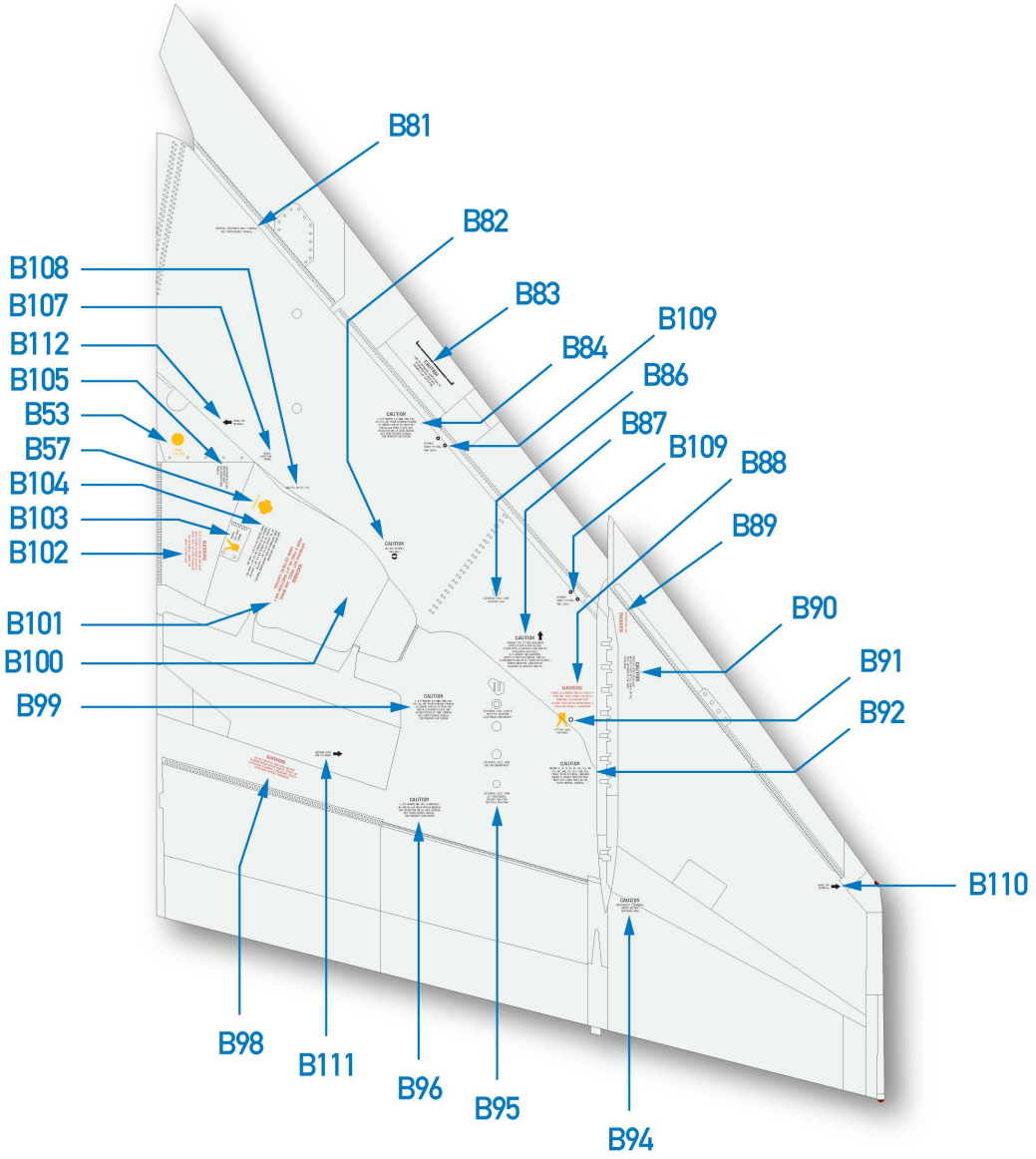
McDonnell Douglas RF-4C/E
Instructional Markings
Left Hand Lower Wing



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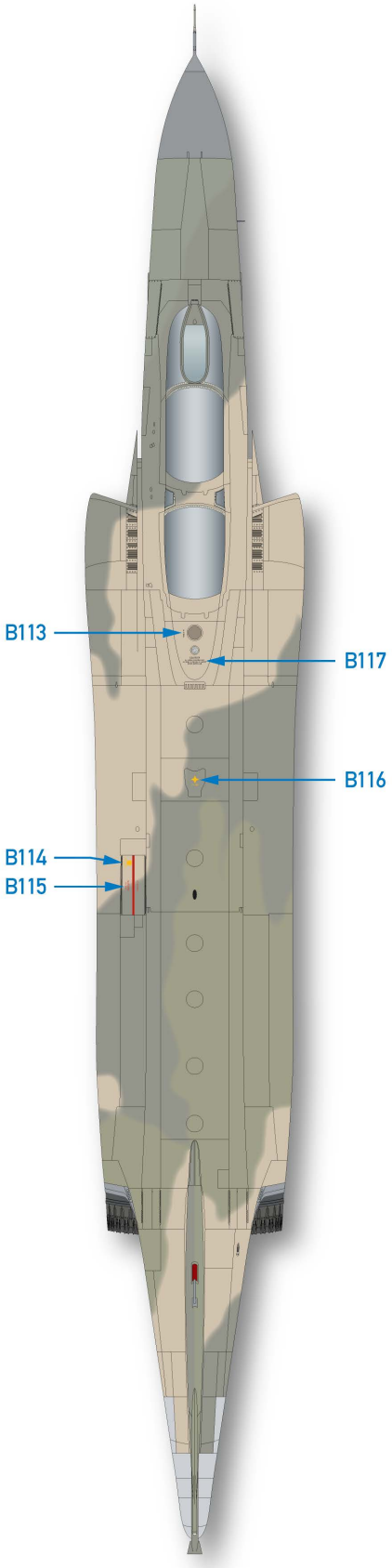
McDonnell Douglas RF-4C/E
Instructional Markings
Upper Fuselage



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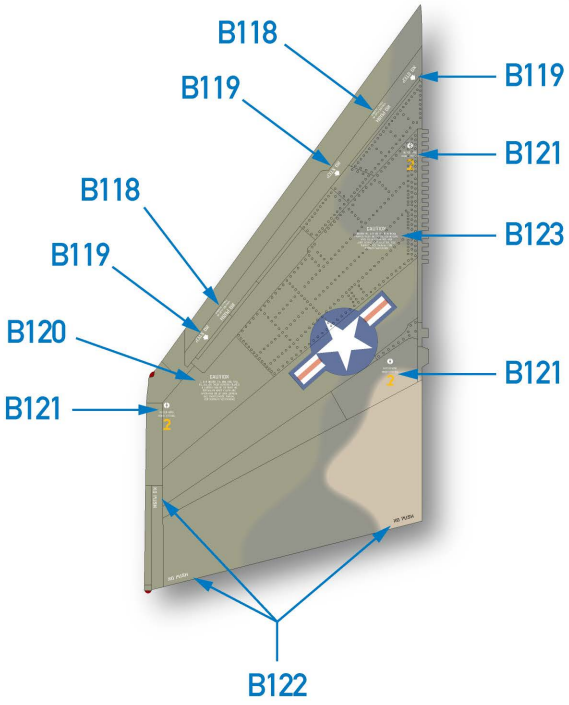
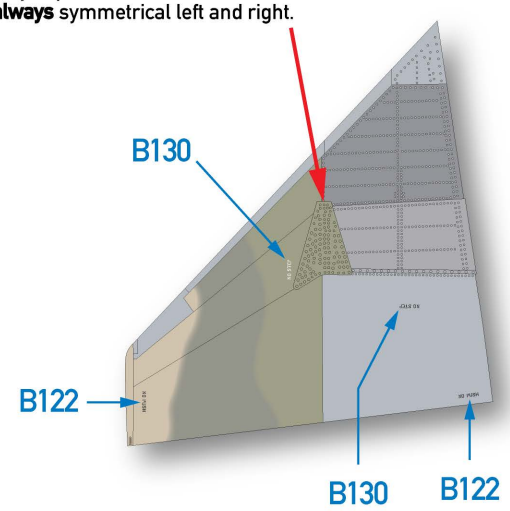
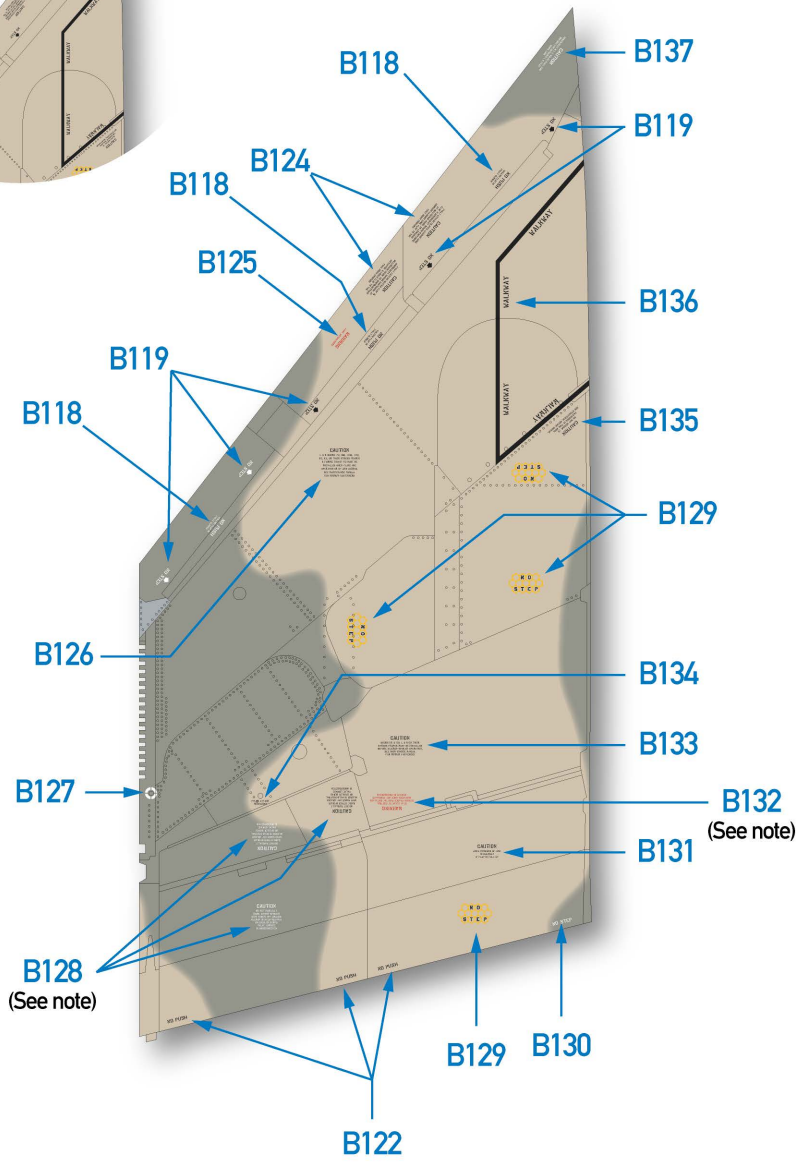
McDonnell Douglas RF-4C/E
Instructional Markings
Left Hand Upper Wing & Horizontal Stabilator



Between 1974 and 1983, if present, the arrowhead shaped doubler plates on the horizontal stabs were **only** on the upper surfaces. After 1983 they could be found on the top only, bottom only, top and bottom, or absent - but **always** symmetrical left and right.





Notes:

B128/B132: Note the orientation of these items. Tops of letters face the trailing edge of the wing.

C88: Fitted to most RF-4E (not RF-4Cs). Note the orientation of this item.

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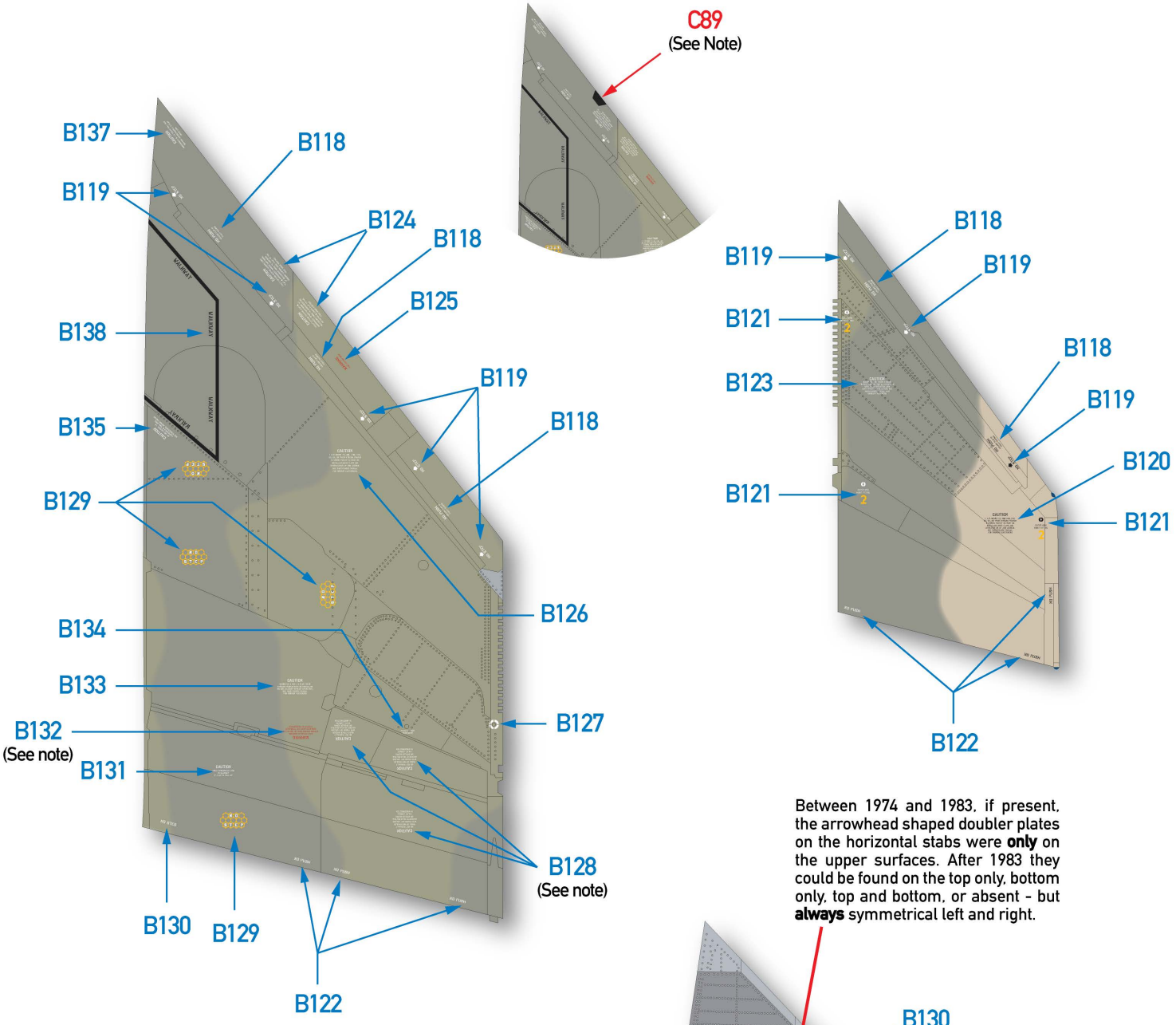
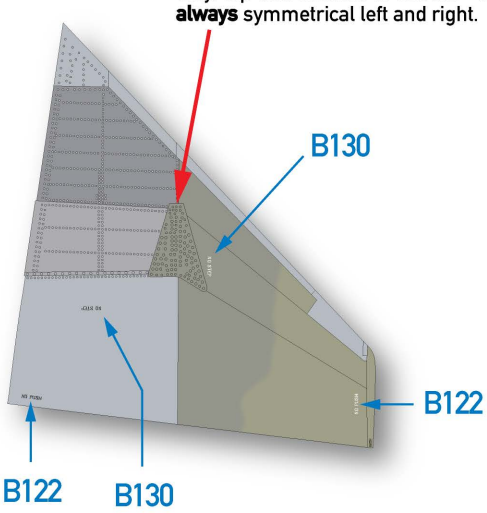
McDonnell Douglas RF-4C/E
Instructional Markings
Right Hand Upper Wing & Horizontal Stabilator



Between 1974 and 1983, if present, the arrowhead shaped doubler plates on the horizontal stabs were **only** on the upper surfaces. After 1983 they could be found on the top only, bottom only, top and bottom, or absent - but **always** symmetrical left and right.



Notes:

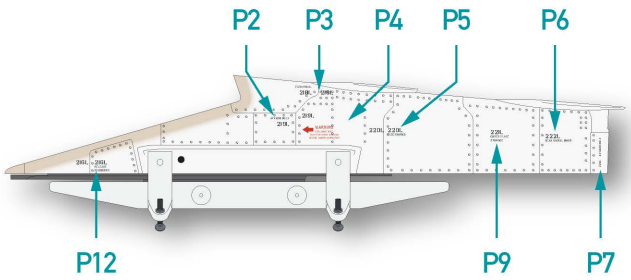
B128/B132: Note the orientation of these items. Tops of letters face the trailing edge of the wing.

C89: Fitted to most RF-4E (not RF-4Cs). Note the orientation of this item.

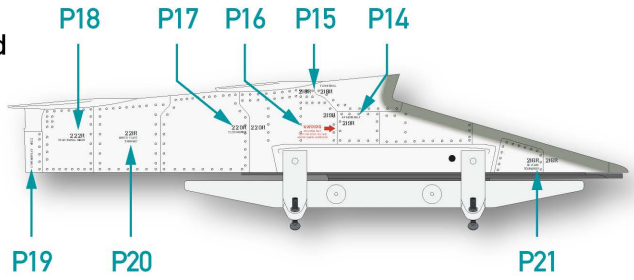
McDonnell Douglas F-4 Phantom
Stencil Data - Inboard Pylons

RF-4C Inboard Pylons

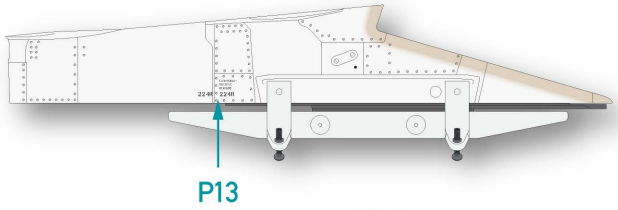
Left Inboard Pylon



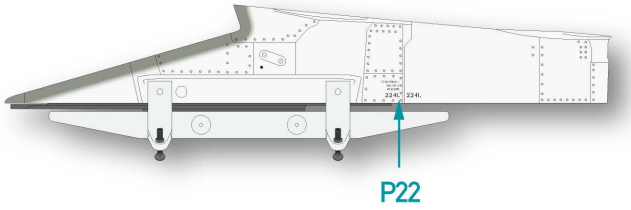
Right Inboard Pylon



Outboard side



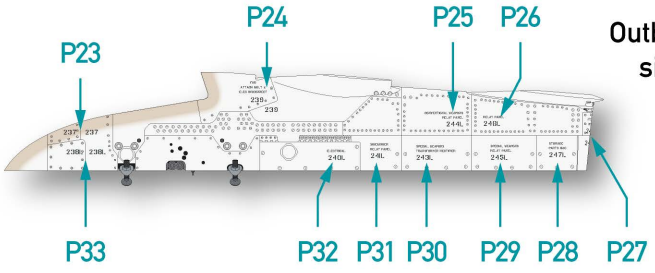
Inboard side



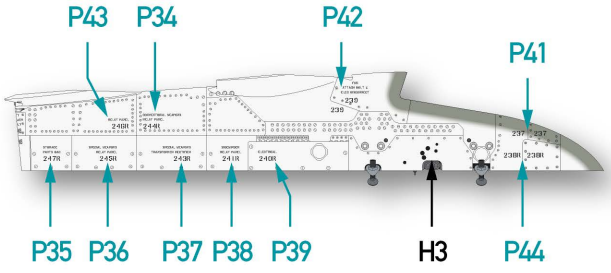
Note: Decals P1, P8, P10, and P11 are not required, and were intentionally omitted from the decal

F-4C/D/E/RF-4E Inboard Pylons

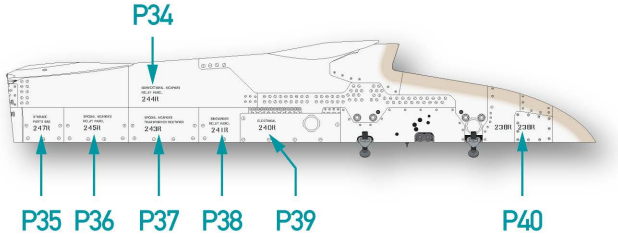
Left Hand Pylon



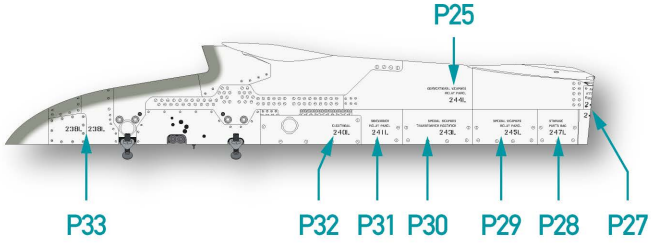
Right Hand Pylon



Outboard side

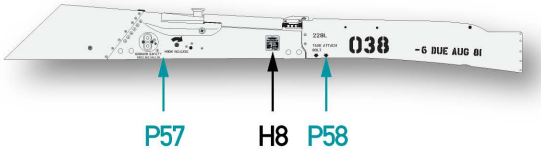


Inboard side

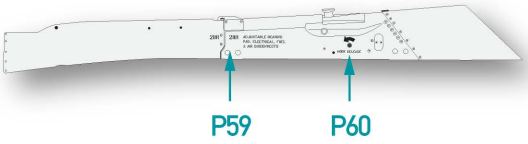


McDonnell Douglas F-4 Phantom
Stencil Data - Outboard Pylons & AIM-9 Launchers

Sargent Fletcher 370 Gallon Wing Tank Pylons



Left hand side



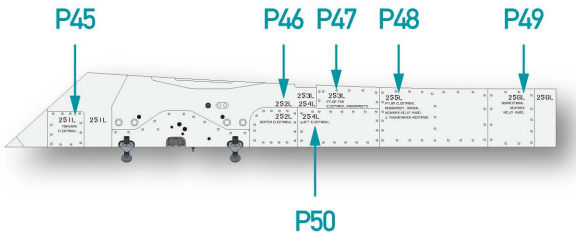
Right hand side

We have provided inspection date stencils (two types) with a selection of years to add to the end. These were common, but not ubiquitous. We have not been able to determine the signficance of the other markings sometimes seen on the fuel tank pylons (such as the large two and three-digit numbers or codes like E78), but again, we have provided a selection for your use. The four-digit numbers on the AIM-9 launcher rails are also a mystery, but commonly seen.

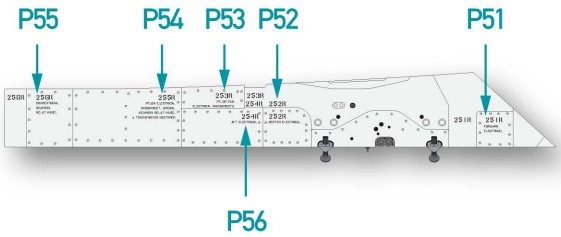
F-4C/D/E Outboard Weapons Pylons

Most pylons had no depot stencils on the inboard side

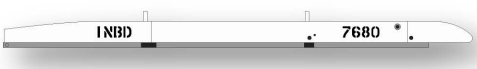
Left Hand Pylon



Right Hand Pylon



AIM-9 Launcher Rails



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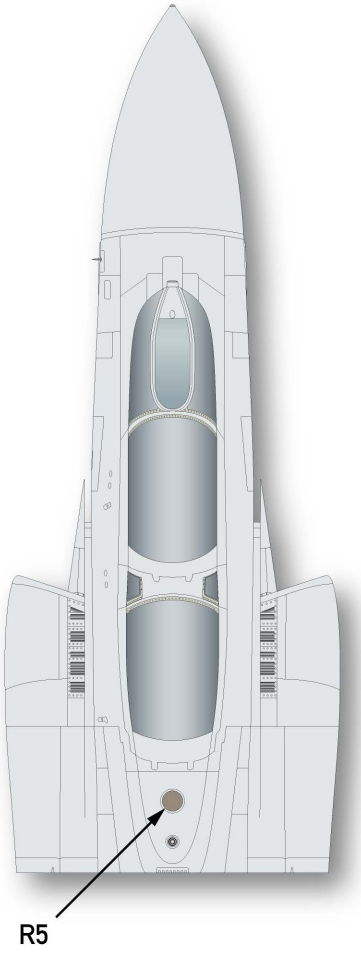
McDonnell Douglas F-4 Phantom

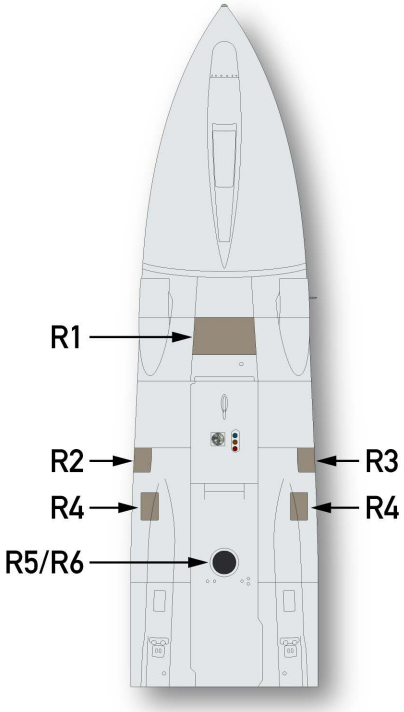
Dielectric Panels

Upper & Lower Fuselage

All F-4 Variants

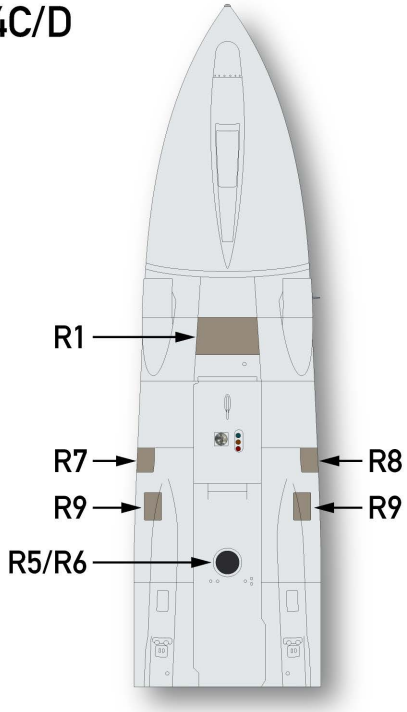


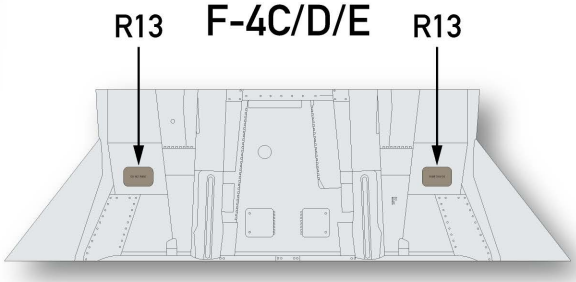
Tamiya



Zoukei-Mura

F-4C/D





Zoukei-Mura F-4E

The F-4 family has a series of fiberglass dielectric panels at various places on the airframe. We have provided these as custom fit items for the Zoukei-Mura F-4C/D as well as for the Tamiya F-4B (and hopefully a future Tamiya F-4C/D for which there are already several parts on the sprues!). You will notice the shapes are radically different on the ones under the nose for the two manufacturers' B and C/D/J kits. Tamiya wins hands-down here, as theirs are almost perfect in shape and dimension compared to our tracings of the real thing. We recommend using decals R1-R6 on the ZM kit for better accuracy.

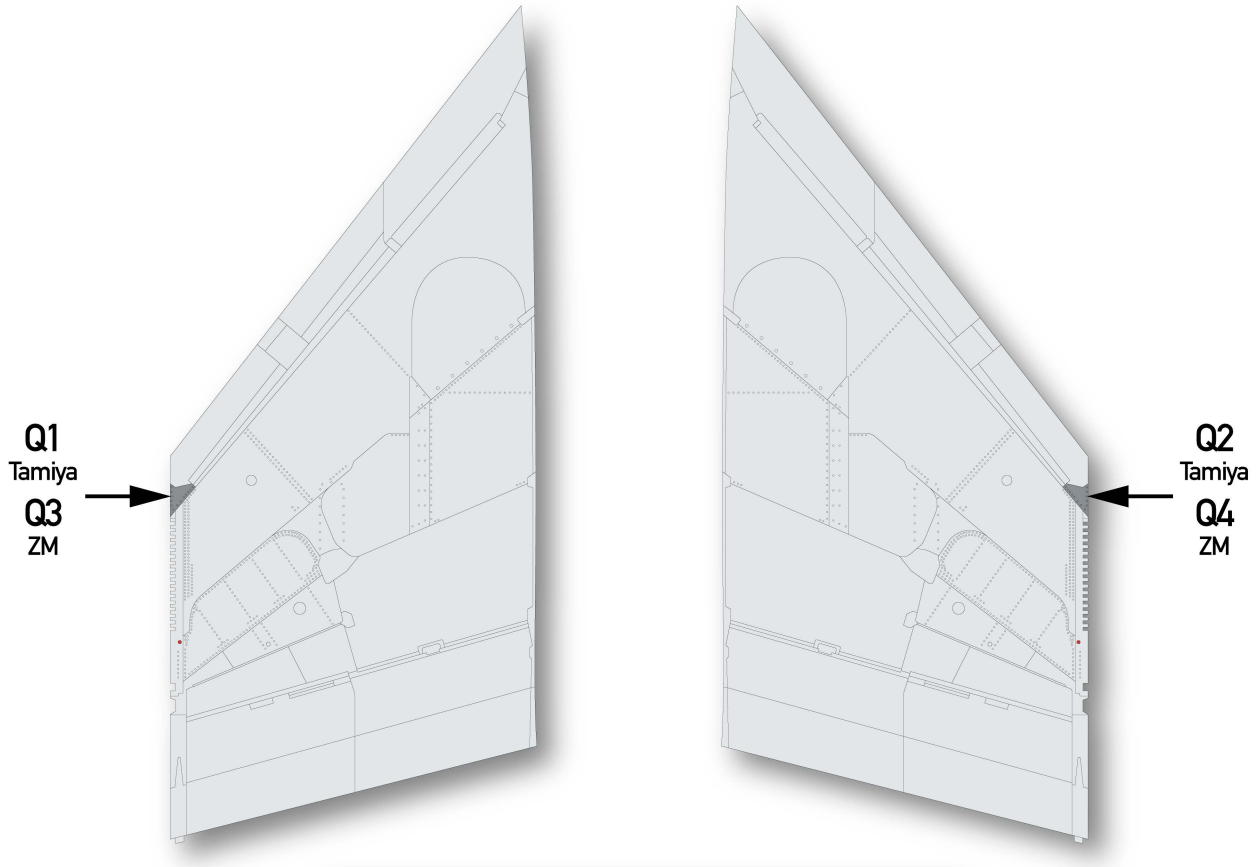
The round antenna panel on the nose gear doors of short nosed F-4s is generally very dark, so this is provided in black.

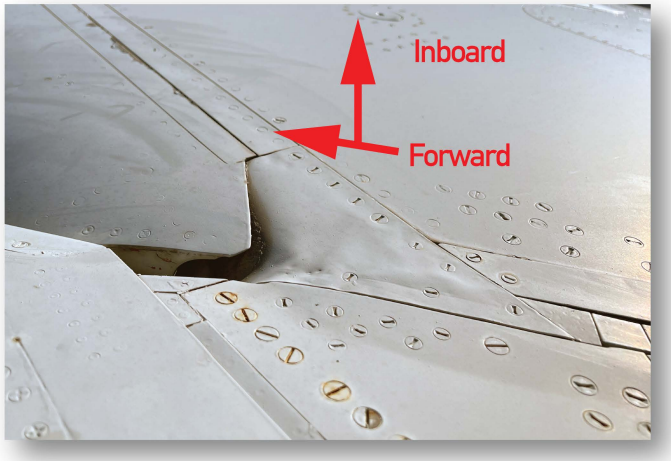
F-4C/Ds and RF-4C/Es have radar altimeter panels under the wing roots, and these are provided from tracings of the real panels, which differ in size, shape, and orientation between the fighter and reconnaissance variants due to different systems being fitted.

The panels on the lower nose of the F-4E are quite different from those on the short nosed aircraft, and are asymmetrical, as correctly portrayed by Zoukei-Mura. All of these dielectric panels can be found in a staggering variety of colors, often quite weathered. We have provided three different shades so you can mix and match at will.

McDonnell Douglas F-4 Phantom
Boundary Layer Control Exhaust Panels

On "hard wing" F-4s (which includes the F-4C, D, RF-4C/E, and F-4Es through 71-0236) the leading edge flaps featured Boundary Layer Control (BLC). This routed high pressure air from the engine compressors through ducts along the leading edges to "blow" the flaps and create greater lift, allowing a slower takeoff and landing speed. The BLC air exhausted through these two panels at the outboard end of the leading edge flaps. From the factory these panels were in their natural stainless steel finish, though on depot repaints they were often overpainted. Tamiya again wins hands-down for the shape and detail of this panel. The real thing is curved allowing for the air to escape, and you can actually put your hand into the opening (if you're not afraid of spiders and scorpions). Zoukei-Mura's panel is flat, just like the surrounding upper wing skin.





The left wing BLC exhaust on an F-4B. This detail is identical on all hard wing F-4 variants (F-4C/D/early E/RF-4C/E).

Photo: fündekals

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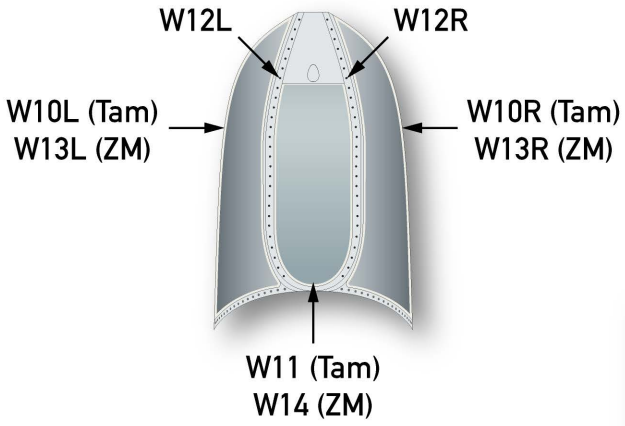
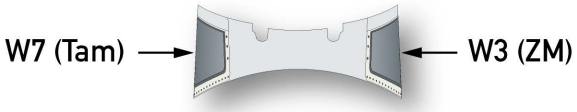
McDonnell Douglas F-4 Phantom

Fiberglass Internal Canopy Sealing Strips

Most depot repaints did away with the exterior raw fiberglass canopy framing on the frame bows. Those decals are found on our sheet FD48038 F-4 Factory Stencils should you need them for your project. But on many aircraft the internal seal strips around the edges of some or all of the glass are visible. Note that this was internal - it was actually the edge of the plexiglass where it bolted into the frame. Applying tiny decals like these to the inside of a 1/48 Phantom canopy would be a lot of fun, so you're welcome to try! We think that applying them to the outside after the framing is painted is probably a good compromise, and will give you the look you see on the real airplane. These strips were not always visible from a distance - on some aircraft they seem very prominent, while on others they're not visible at all. We're not sure why that is, except that possibly differences in materials used during overhauls might account for it.

And no matter what you may read, the canopy interior seal strips were NOT yellow. Not ever, not even once. They were unpainted fiberglass, which could range from almost white to a light buff color, but *not* yellow on any American Phantom!!





A fantastic shot out the back end of a KC-135. The windscreen demonstrates how the internal canopy seal strips are often only visible on the windscreen side panels. Rarely you can see them inside the laminated center windscreen section.

On the forward and aft canopies, the seal strips are only sometimes only visible on the leading and trailing edges, and sometimes along the bottom edge as well.

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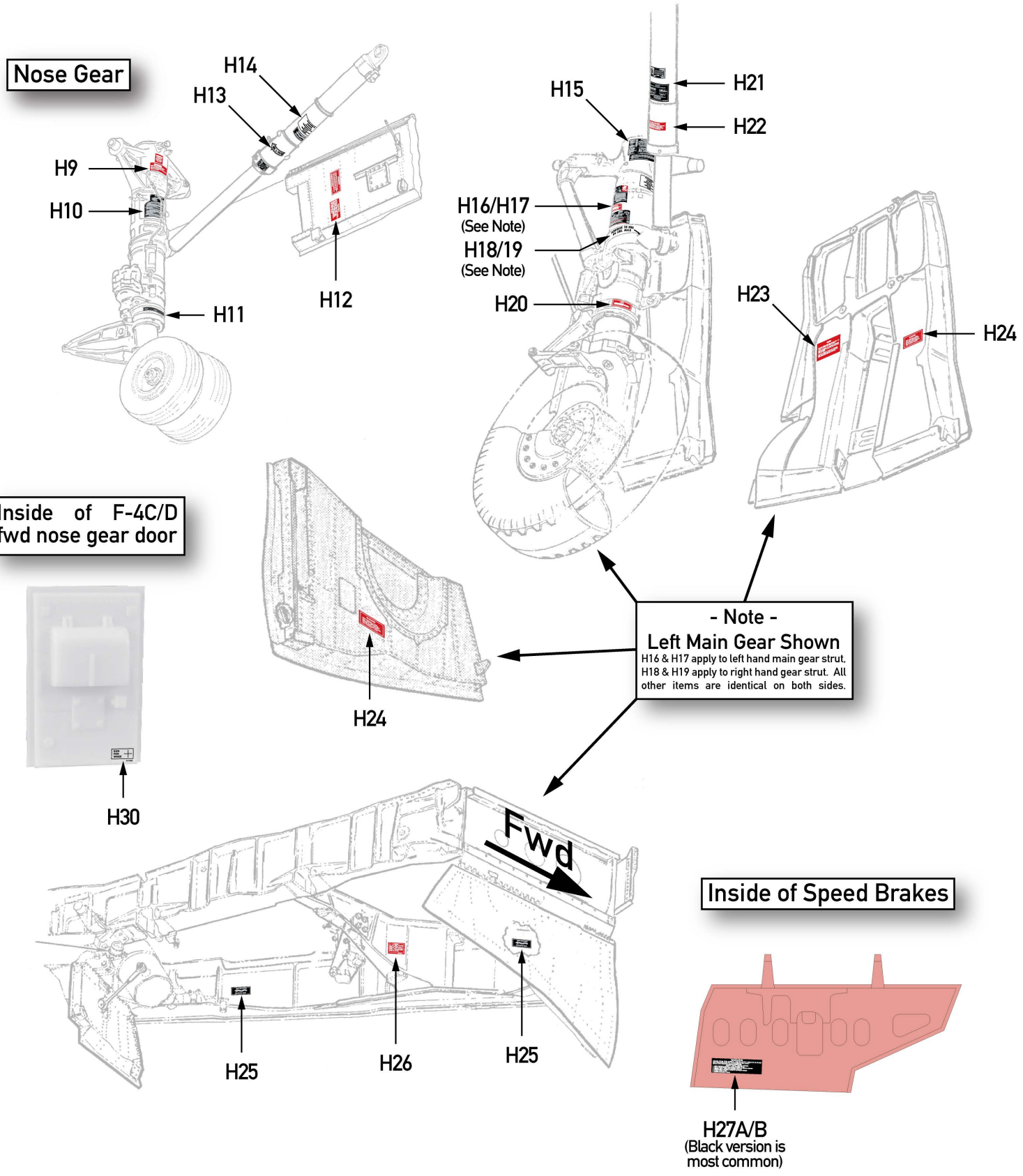
McDonnell Douglas F-4 Phantom
Informational Placards
Gear Struts, Doors, & Bays



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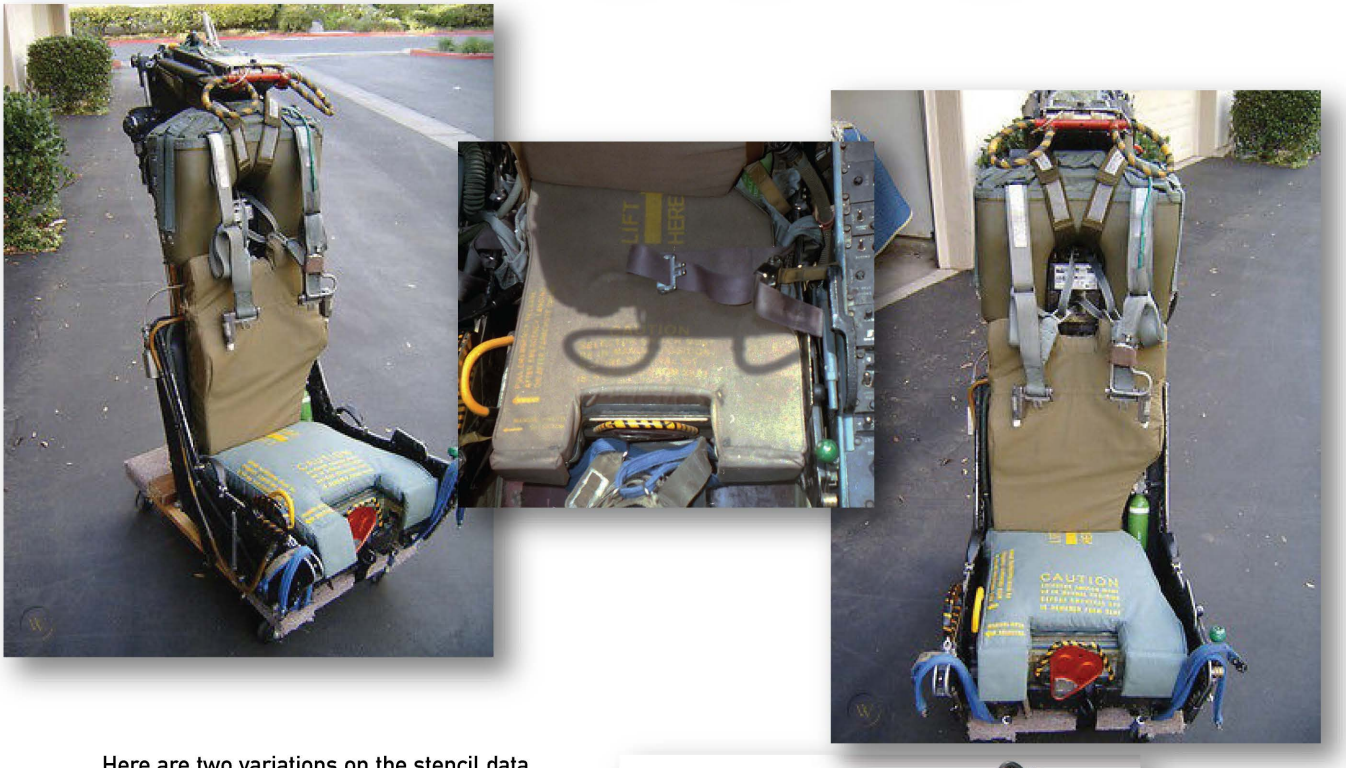
McDonnell Douglas F-4 Phantom

Martin Baker Mk.H5/H7 Ejection Seat Survival Pack Markings



Here are two variations on the stencil data applied to the survival pack/seat cushion on the Martin Baker Mk.H7 seat as fitted to all F-4s after around 1967. The one good photo we have found of the earlier Mk.H5 seat shows very similar markings on the survival pack. These images show an Air Force style seat (above) and a Navy style seat (at right) with different variations of the stencil data, and there were others as well. You can cut the decal to match these or use as-is, as there seems to be very little standardization. Research on ejection seat details is a sorely lacking area in the scale modeling world - a situation that we hope will someday be recitfied by some enterprising researcher/author.

Formation Lights

Flying high speed fighters in formation at night and/or bad weather is an inherently dangerous operation in the best of times. As a way to increase safety while at the same time not giving away the aircraft's position with bright or flashing lights, low intensity formation lighting was developed in the 1960s. This consisted of strips of electroluminescent lights applied to various places on the aircraft to provide cues to the position and distance of the aircraft from an observer. These formation lights first appeared on production F-4s beginning with the F-4E-45-MC production block, serial number 69-7579. The USAF and most foreign users adopted them, with the notable exceptions of the RAF and Royal Navy, and (oddly) Germany's RF-4Es.

The USAF retrofitted its entire fleet of earlier F-4Cs, Ds, and Es and RF-4Cs with these lights during PDM, with the entire fleet being outfitted by 1974. There were significant differences, particularly in the treatment of the lights on the wing tips, between factory fitted and depot upgrades (see following pages).

F-4 fuselage and vertical tail lights are mounted in a frame that stands proud of the skin of the aircraft by about 1/8" (approximately 3-4 mm), held in place with Philips head screws. On the wing tip lights on hard wing aircraft, the frame holding the electroluminescent strips was set into the skin panel on the tip, while on almost all depot mods we have found, it appears slightly raised above the wing skin. The design of the wing tip lights changed completely when the slatted wing was introduced on the assembly line with F-4E-48-MC

71-0237. It appears there was an early version, found on aircraft at least midway through the FY72 production blocks (see photo next page), and a later version fitted through the end of F-4 production.

On factory-installed lights, the mid-fuselage strips in Access Doors 36L and 36R were invariably mounted at a slight nose-down angle. Depot-installed lights in this location could be seen the same way, while others appear to be parallel to the lower edge of the panel.

There were many subtle variations of these lights, particularly on the wing tips, so study photos carefully to know what is correct for your subject aircraft.

Photos: fündekals collection

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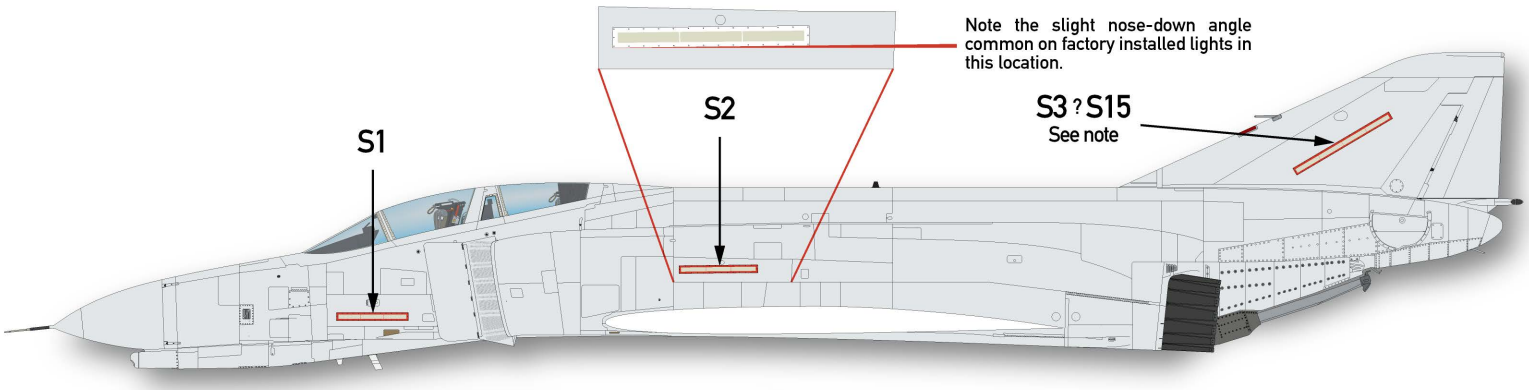
McDonnell Douglas F-4 Phantom

Low Intensity Electroluminscent Formation Lights



Left: the forward fuselage light on QF-4E-61-MC 74-1625 showing the slight raised frame.

Below: the center fuselage light on the same aircraft. Note the slight nose-down angle common on factory installed lights in this location.

Note: Pending further research, it appears that on (at least) F-4Cs and Ds with depot-installed lights, the four-light strip on the tail was shorter than the factory F-4E type decal (S15). The precise depot installed location and angle on the tail could also vary. Check your references carefully!

Left: the left wing tip light on F-4E-54-MC 72-1484 showing what we believe to be the early configuration of the slatted wing tip light. Note the brownish frame around the light.

Below: an F-4F (identical with later block F-4Es) showing the more common style of lights. This aircraft lacks the black frame seen on many aircraft.

Left: a shot of an IDF hard wing F-4E with the narrow black framing around the light strips. These were often seen mixed with unframed light strips on the tail on the depot installed lights.

Photos: fündekals collection & courtesy Yosi Yaari

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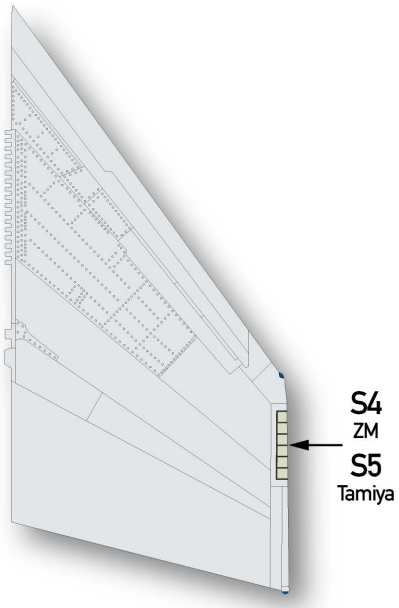
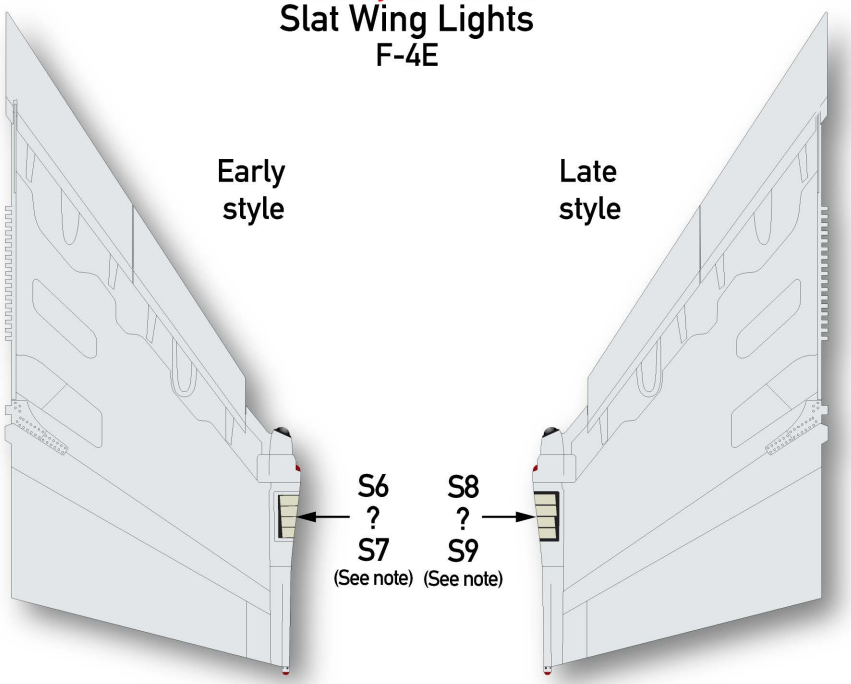
McDonnell Douglas F-4 Phantom
Low Intensity Electroluminscent Formation Lights

Factory Installed
Hard Wing Lights
F-4E/RF-4C/E



Factory Installed
Slat Wing Lights
F-4E



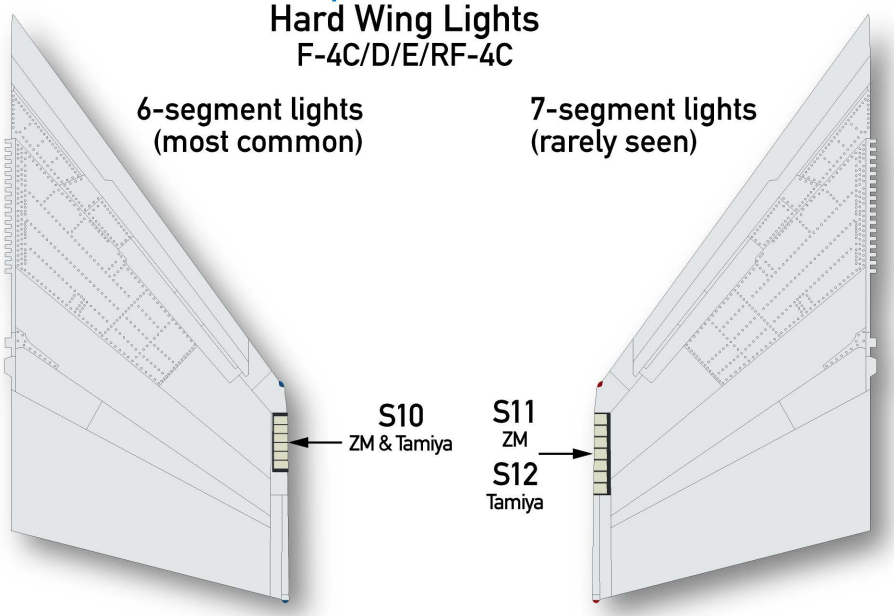
Factory lights ↑ **↑ Factory lights**

Depot lights ↓ **↓ Depot lights**

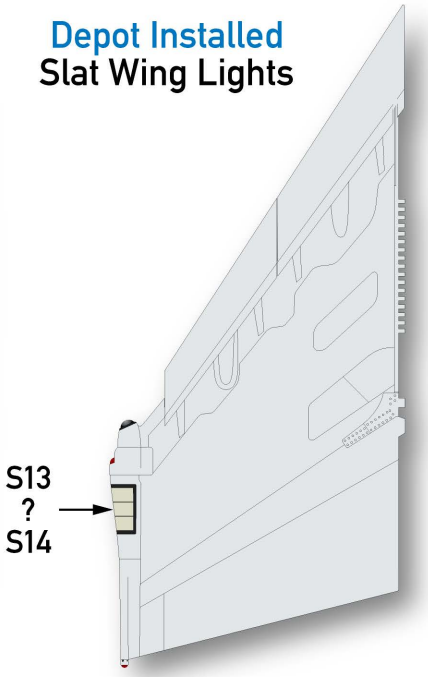
Depot Installed
Hard Wing Lights
F-4C/D/E/RF-4C

6-segment lights (most common)

7-segment lights (rarely seen)

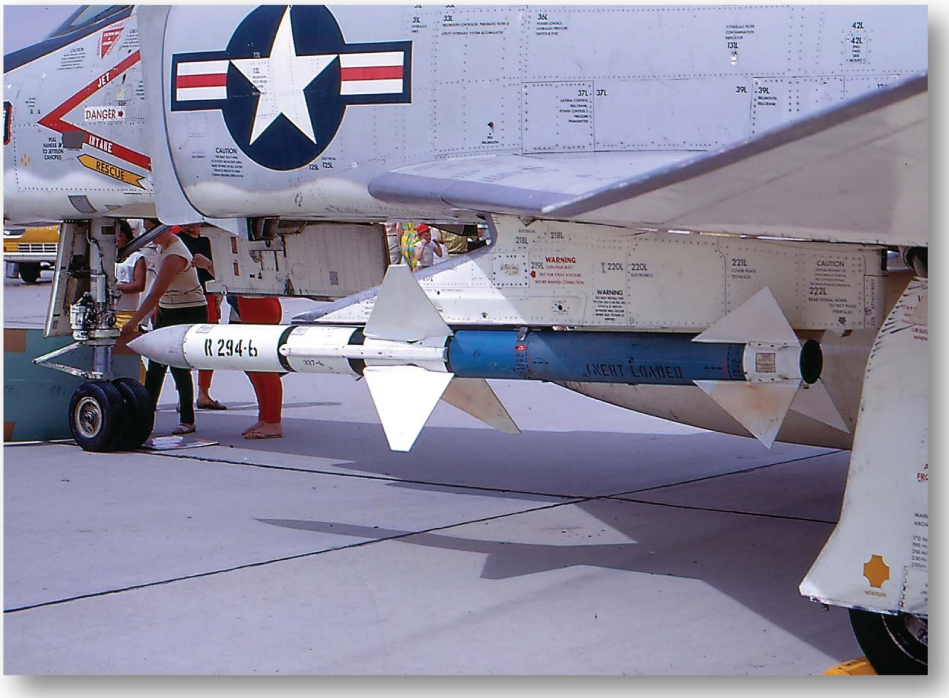


Depot Installed
Slat Wing Lights



Note: Decals S6/S7 are the initial style of lights fitted to early factory slat-wing aircraft through at least sometime in the FY72 production blocks. Decals S8/S9 are the later style. Check photos of the specific aircraft you are modeling, but if in doubt use the more common later style.

McDonnell Douglas F-4 Phantom
AIM-7 Sparrow Missile
Serial Number Markings



We have provided a selection of serial numbers so prominent on AIM-7 Sparrow missles from the early 1960s to the early 1980s as seen loaded on Phantoms. There are several styles, and a range of serials from very low ones, into the 10,000s, covering most of the period when aircraft with their factory stencil data would have carried them. Above and below are photos showing the positioning of these serials. Check your references for the most appropriate serial range for your subject.

Photos: fündekals collection

Tread lightly...

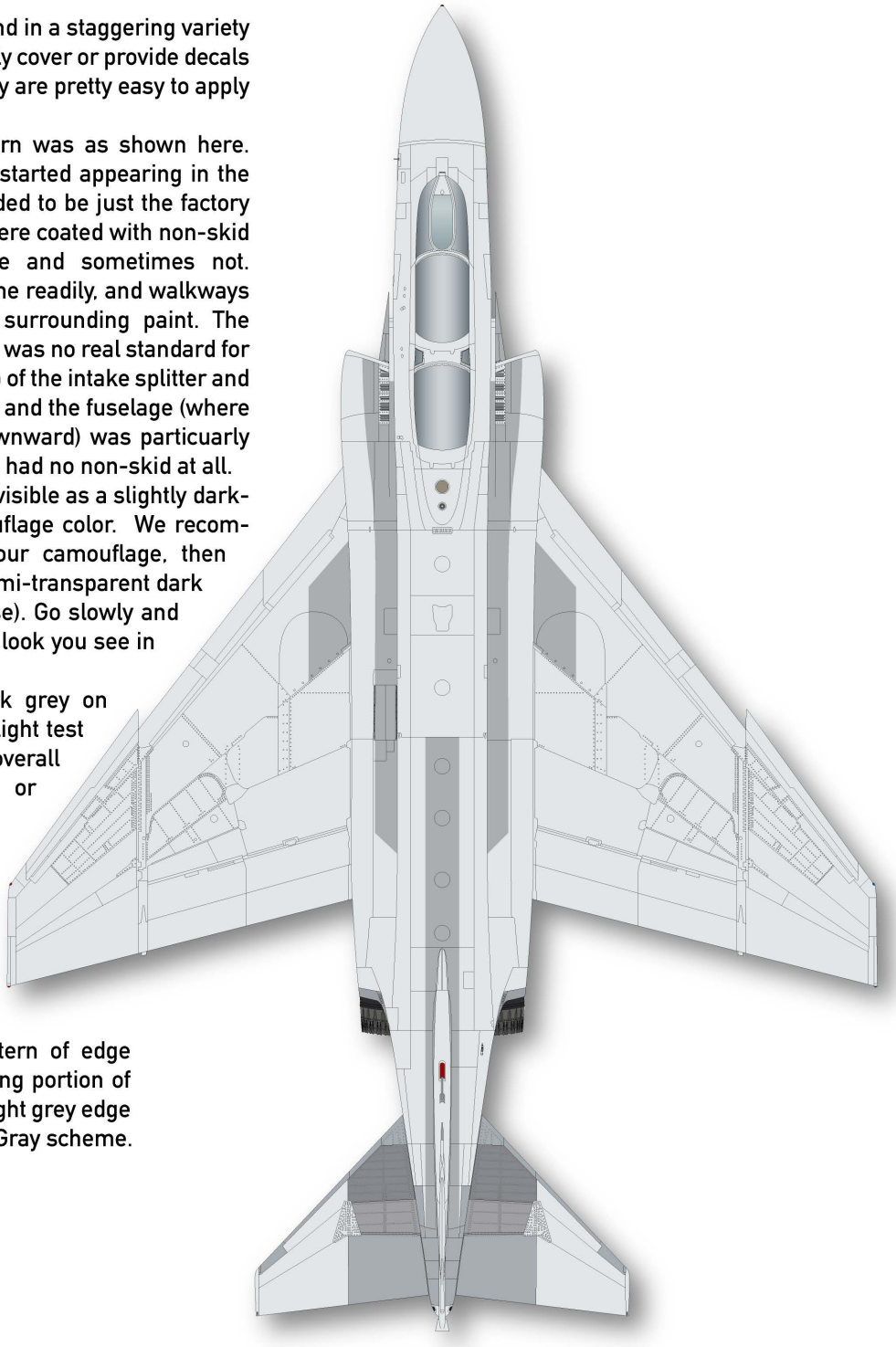
Walkway areas on the F-4 can be found in a staggering variety of different styles. We could not possibly cover or provide decals for every style here, but fortunately they are pretty easy to apply with paint on your model.

In general, the walkway area pattern was as shown here. These more extensive walkways first started appearing in the mid-1970s. Prior to that time they tended to be just the factory applied area on the wing roots. They were coated with non-skid paint, which was sometimes visible and sometimes not. Non-skid paint did collect dirt and grime readily, and walkways usually got dirtier looking than the surrounding paint. The pattern shown here is typical, but there was no real standard for depot repaints. The treatment of the top of the intake splitter and ramp, and the area between the intake and the fuselage (where the boundary layer splitter curves downward) was particularly variable. On some aircraft these areas had no non-skid at all.

On some aircraft the walkways were visible as a slightly darkened version of the underlying camouflage color. We recommend replicating this by painting your camouflage, then masking and applying a thin coat of semi-transparent dark grey (black will probably be too intense). Go slowly and build it up in thin layers to achieve the look you see in photos of your subject aircraft.

Other variations were opaque dark grey on camouflaged aircraft, and on ADC or flight test aircraft with glossy grey or white overall finishes, a dirty medium grey, with or without the edge stripes.

The use of the thin black edge striping on the walkways was also highly variable. We have provided lots of this striping, and given how thin it is, it can be applied to follow the gentle curves of this pattern without any problem. We have seen aircraft with a complicated pattern of edge striping covering each individual moving portion of the intake ramp - have fun with that! Light grey edge striping is provided for use on the Hill Gray scheme.



Because you like it dirty...

Phantoms, not to put too fine a point on it, were filthy beasts. First and foremost, the pair of giant General Electric J79 soot generators was back there spewing an endless trail of oily, gunky, sooty brown-black goo. It's really hard to over-do the exhaust nastiness on any Phantom prior to the late 1970s. Check the condition of the vertical fin on Thunderbird 4 from this period - it was ***black***. In the photo at right, carefully note the soot pattern on the lower stab surfaces. It gets more dense as it goes aft, and sweeps out toward the tips as it does. This is almost universally missed on models. Also note how relatively clean the belly is forward of the main gear bays. The wing spar box structure didn't really leak, but every panel around it sure did! Aft, there were a number of discreet point sources of leakage often, as here, with a heavy streak blowing aft from them. Flap, aileron, and speed brake mechanisms leaked, but oddly, you rarely see leaks from the leading edge flaps. There was heavy staining from the brakes. We have seen F-4s

with sparkling clean main gear doors, because that's what is visible from the ramp, and crew chiefs sometimes wiped them down so their bird looked nice on the ramp (always try to impress colonels - it makes your life easier). All the other doors not visible to the casual observer usually stayed dirty. Like the mains, the nose gear doors could have been wiped down, or they might be dirty. The AIM-7 Sparrows may be weathered, but they didn't get dirty like the airframe did. The radome on the Sparrow is a ceramic-like material that is usually an off-white light grey color - not "radome tan" like you see on so many models. It tended to accumulate dirt and darken slightly. Leading edges of wings, intakes, and much more rarely the vertical fin did get chipped up, especially in the buggy environment of Southeast Asia. Less so in Europe and much of the US, so try not to over do that.

Photos: fündekals collection

Wear and tear...

Although this F-4D still carries her factory camouflage and stencil data, we include her here to demonstrate a couple of important points to help you make your model more accurate. First, the upper side of the intake trunks and the tops of the intake splitter plate and ramp, especially on the left hand side, got a lot of boot traffic. Crews boarded from the left, and the crew chief spent a lot of time on that side helping them get strapped in. The way you got down from there was generally to sit down on the intake and slide down onto the wing root walkway area. Thus, dirty hands and boots left their smudges and scuff marks, and often you can see streaks of that gunk and worn/chipped paint on the side of the fuselage above the wing walkway, left > right.

The other important thing this photo shows is the way the paint wears through. As unlikely as it sounds, we have literally a mountain of evidence to show that unlike the way we usually paint our models, most real F-4s were painted dark green first, then the lighter green, and *then* the tan - and *then* the light grey! This aircraft shows a lot of green peeking through the tan where boots and the atmosphere have worn the tan paint away. And closeup examination of many aircraft clearly reveals that they had lighter colored overspray (tan and light grey) on top of the green. Paints with truly opaque pigments allow this, and in most cases it was easier to get the job done by doing it that way. It's counter-intuitive we know, but the evidence is there!

The inset photo shows typical scarring on the upper fuselage forward of the air refueling receptacle, where the boom has scraped along the skin, taking the paint with it. Boomers will tell you that's always the pilot's fault!

Photo: fündekals collection

Stencils galore...

A series of RF-4C shots from Kadena AB, Okinawa in the late 1970s. This aircraft is a perfect example of full depot-applied stencils. White on green, black everywhere else, with full text accompanying the access door markings. Note that on Door 37L (just below the leading edge of the over-wing formation light in the first photo), the numbers are white, while the text is black. Not uncommon, and simply a function of where the camouflage demarcation line fell on that particular bird. Also note the inverted "DANGER" wording on ejection warning triangle - very unusual. Someone can always figure out a way to do anything wrong! At left, the crew chief is verifying that the boundary layer control system is functioning properly on the leading edge flap.

Photos: fündekals collection

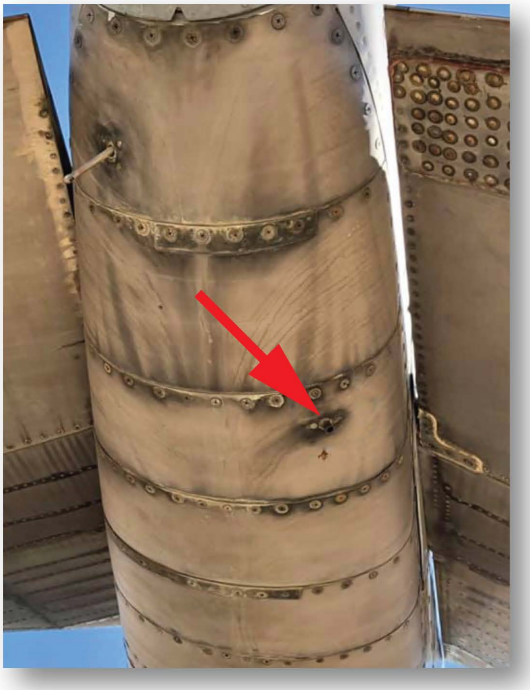
Both Ends of the Spectrum...

Above: F-4C-18-MC 63-7484 from the 4453 CCTW at Davis Monthan in March 1970. She has zero visible stencils, and only the most basic safety/warning markings near the cockpit. No access door markings and no hoist point markings. She likely has the other NATO servicing symbols on the nose and belly though they are not visible here.

Below: F-4C-22-MC 64-0691 of the Illinois ANG from 1974. She carries the full stencil treatment, including the big hook warning placard, rarely seen on Cs and Ds, espcially outside of Europe.

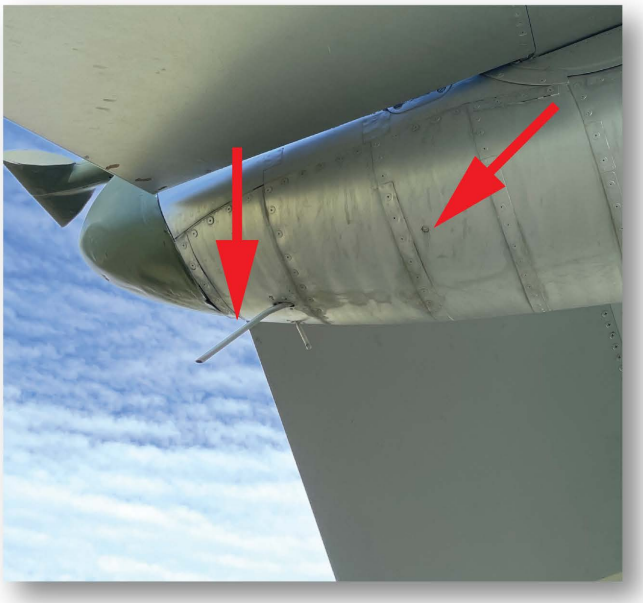
Photos: fündekals collection

A seldom noticed detail...



The original style and location for the vent tube is seen on this YF-4J (built as an F-4B). The handle above and to the left is the manual drag chute door release, found on all Phantoms.

This is a small detail, but one that is quite visible, and one that as far as we're aware has never been noted in any F-4 modeling reference before. As originally built, Phantoms had a very small fuel system vent tube, about 1/2" (12.7 mm) in diameter, that protruded about an inch (25 mm) above the surrounding skin. It was on the lower right side under the stabilator, in the third segment forward of the tail cone. This vent remained unaltered on Navy aircraft, but on USAF aircraft, a Time Compliance Technical Order (TCTO) was issued sometime in the early 1970s requiring a change to the vent tube. The new tube was much longer, and was situated just to the left of the centerline in the first skin segment forward of the drag chute door. On some aircraft the original loaction remained visible, with a skin patch covering it. On others it is completely gone. The change was virtually universal on USAF/ANG/AFRES aircraft by the late 1970s.



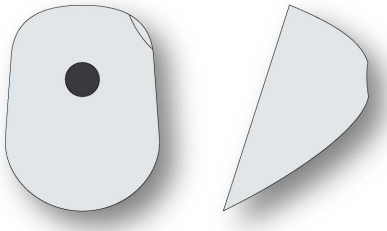
On this F-4C you can see the patch over the original location, and the TCTO version that replaced it.

Three photos of the revised vent tube on F-4C-22-MC 64-0673. Note that it is slightly left of centerline, and how the tip is angled to be basically parallel with the bottom of the fuselage structure in this area.

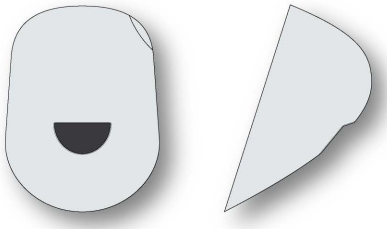
Photos: fündekals

More seldom noticed details...

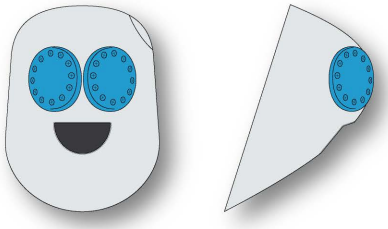
A



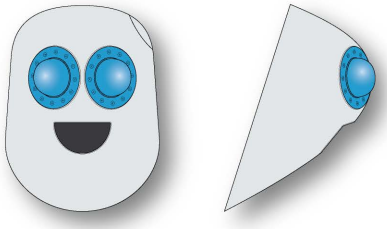
B



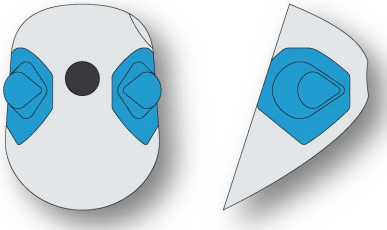
C



D



E



Way back at the very tail end of every Phantom is the drag chute compartment door, which also serves as the aerodynamic tail fairing for the fuselage structure. As originally designed, the opening in the end was a perfectly circular hole right at the very tip of the structure (illustration A - Tamiya part B5, ZM part A12). This version was fitted on the assembly line to all F-4B/C/D/early E/Js and RF-4C/Es Note that in side view, the opening is slightly scalloped and has a slight upward tilt.

In the mid-1960s, the need for radar homing and warning receiver systems (RHAW) became readily apparent over Vietnam. Apparently in anticipation of the possible need to mount RHAW antennas on the tail cone, it was re-designed with the now familiar "smile" shaped opening lower down. This appears to have become the production standard somewhere in the early FY68 production block (illustration B). The first system fitted to the F-4D and E was AN/APS-107A, although this did not require antennas on the drag chute door, instead utilizing a fairing on the vertical fin cap trailing edge (see next page).

The AN/APS-107A system never lived up to expectations, so it was replaced with AN/APR-36/37. This system did away with the fin cap antenna and replaced it with two 'pancake' shaped antennas on the drag chute door (Illustration C - Tamiya part B6, ZM part B2). On the hard wing F-4E the forward hemisphere antennas were mounted in the leading edges of the inboard wing (decals C88 & C89), and on slat wing F-4Es in the 'eyeball' type antennas on the forward edge of the wing tips. We don't believe this system was ever installed in the F-4D, however at the time of writing we are still enganged in research on USAF F-4 RHAW systems history and hardware.

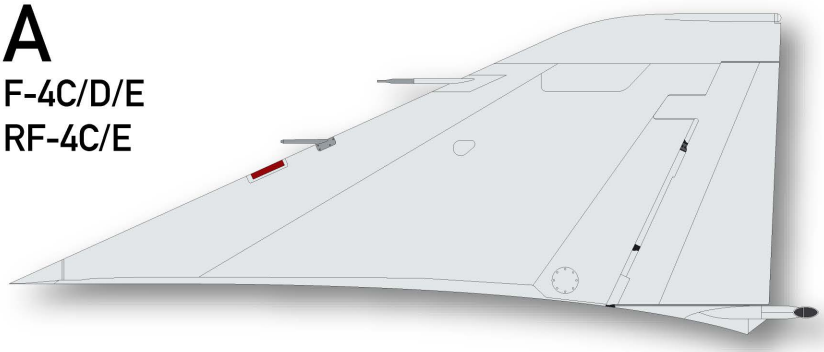
Beginning in the mid-1970s, F-4Ds, Es, and (some) RF-4Cs receieved the AN/ALR-46 system. This is identified by the two hemisperhical 'eyeball' type antennas on the tail cone (illustration D), and this system also used the similar antennas on the wing tips of the F-4E slatted wing. The EF-4C "Wild Weasel" conversions carried these same antennas on the tail cone, and most aircraft kept them even after being returned to normal F-4C configuration.

The final type of tail cone antennas were originally found on RF-4Cs with its unique AN/APR-25 installation (illustration E). RF-4Cs did not use the bullet fairing on the fin cap (see illustration C, next page) for the AN/APR-25 system. We have documented this drag chute door antenna configuration on several very late service F-4Cs and Ds, and we believe its appearance on these aircraft was simply a product of a replacement tail cone being fitted during PDM for whatever reason, and the depot simply using the assembly off the shelf that was available. Likewise, almost any of the types shown could have been found on a given airframe, depending on what the depot had available at the time.

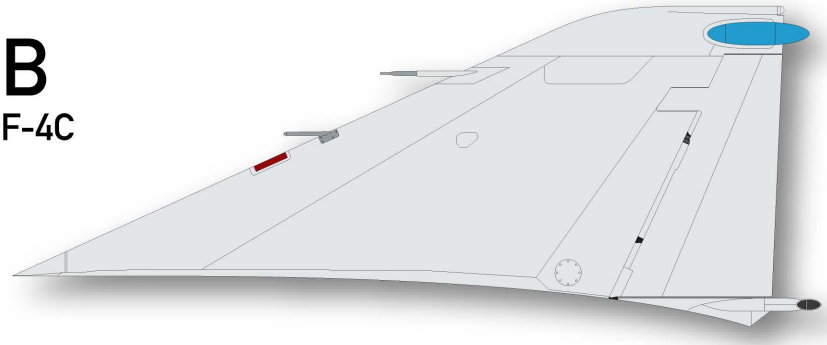
There were other RHAW systems installed on various USAF F-4s, but this covers the most common types, so as always - build what you see in photos!

More seldom noticed details...

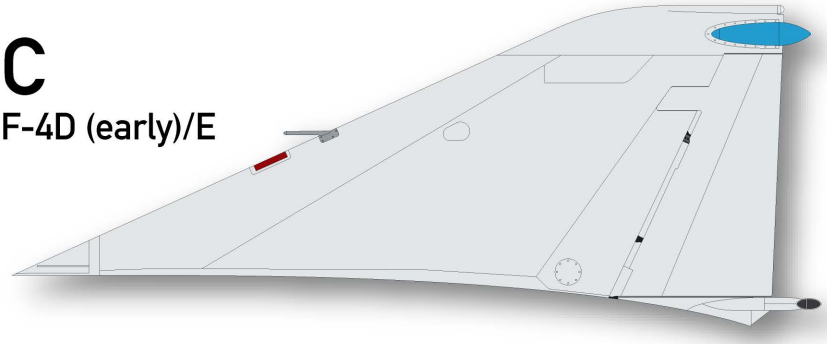
A
F-4C/D/E
RF-4C/E



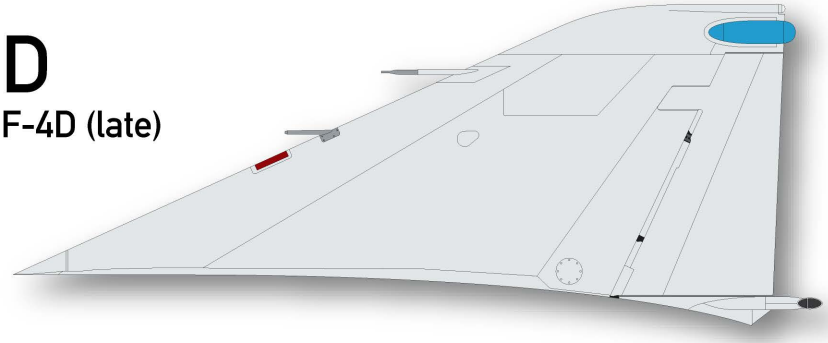
B
F-4C



C
F-4D (early)/E



D
F-4D (late)



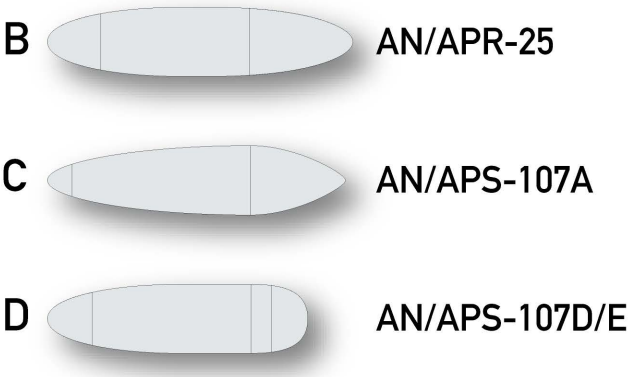
As with the drag chute door antennas, the RHAW antennas fitted to the fin cap evolved over time. As originally designed, the fin cap only contained the aft-facing white position light (illustration A). All F-4Cs, F-4Ds, F-4Es, and RF-4C/Es left the factory looking like this.

Starting in 1966, the APR-25/26 RHAW system was installed in the F-4C, with its characteristic flat-sided bullet shaped fairing mounted between the position light and the top of the rudder (illustration B). Virtually all F-4Cs received this system, although it took until well into the 1970s before it was fleet-wide.

Before they were committed to combat in Southeast Asia, F-4Ds and Es had the AN/APS-107A system installed, with both types initially sharing the more conical, pointed style antenna fairing with a circular cross-section (illustration C). This type remained on the F-4D until the early 1970s, when the more blunt style AN/APS-107D/E (illustration D) began to replace it. The blunt style was only found on F-4Ds. Many F-4Ds in the US and Europe did not receive any RHAW equipment until well into the mid-1970s, and retained the 'clean' fin cap with which they left the factory.

The F-4E only carried the more conical style (illustration C) APS-107, fitted before its combat debut with the 388th TFW in November 1968. In later years some F-4Es had the fairing removed, while others kept it, though it was inoperative.

As with the drag chute doors, replacement fin caps fitted during PDM could have any of these types of antennas on them, even though the systems they originally contained were inoperative. We have documented an F-4C (63-7626) that carried the F-4D/E AN/APS-107A type fairing (illustration C) until it was retired - the only F-4C we have found that was so equipped. Coincidentally, this same aircraft had the RF-4C type antennas on the drag chute door (illustration E on the previous page). The fin caps were interchangeable, so once again - build what you see in photos!



Combat Skyspot...

F-4C/D

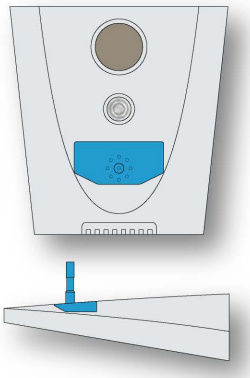


Photo: Jim Goodall

F-4E
(depot installation)

Photo: Scott Wilson

F-4E
(factory installation)

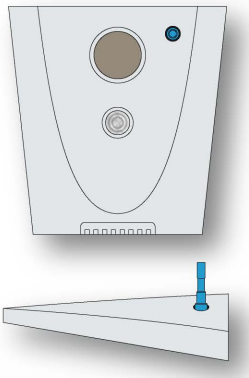


Photo: fündekals collection

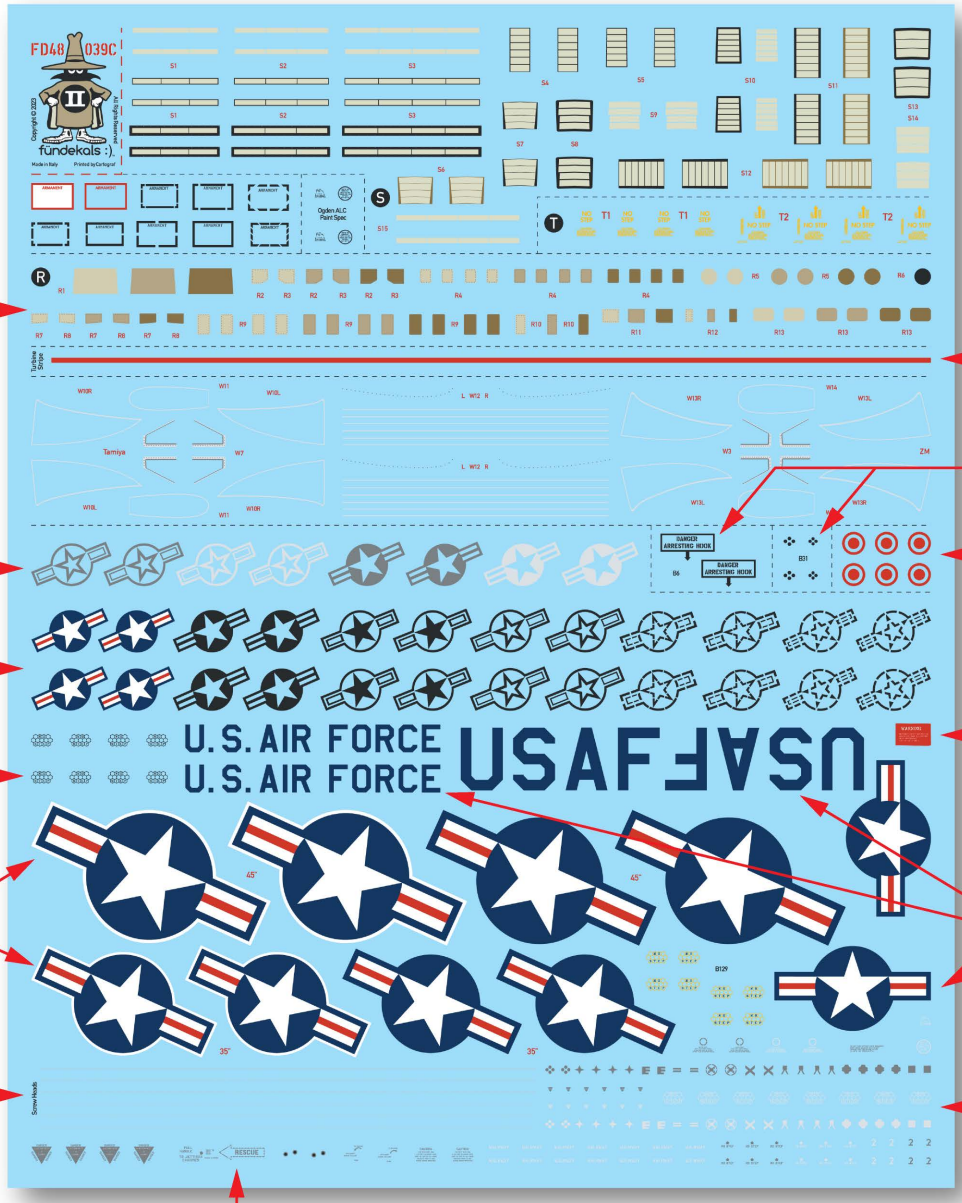
This photo shows the F-4E factory installation, with just the mounting stub, but no SST-181 antenna fitted.

This photo shows the F-4E factory installation. Note the varying diameters of the antenna, and the black neoprene boot covering about 2/3 of its length. The green camouflaged portion is the mounting stub.

Combat Skyspot was a radar-controlled, ground-directed bombing system. It utilized MSQ-77 and TPQ-10 ground radars, and the SST-181X radar beacon transponder in the aircraft. Combat Skyspot's command guidance at night and poor weather was used (ideally) to provide improved bombing accuracy. It used a combination radar/computer/communications system ("Q" system) at operating locations in Southeast Asia. The station provided bomb run corrections and designated when to release bombs (almost like an update of the Luftwaffe's "X-Gerät of early WWII). Bomb mission planning included providing coordinates with 10 meter (11 yard) accuracy to the radar sites, then the aircraft were handed off to the site, tracking the aircraft by radiating it, activating Motorola SST-181X beacon transponder, and radioing of technical data from the aircrew to the radar site such as the airspeed/heading for the central to estimate wind speed on the bombs. With the bomber near a designated initial point (IP) the GDB site would begin a radar track which would calculate a computer track and solve the bomb release problem for the aircraft.

The external portion of the SST-181X radar beacon transponder was mounted on Access Door 19, immediately behind the aft canopy, where the IFF antenna and position light were located. The antenna itself was a cylindrical shape with varying diameters along its length. On the F-4C/D the antenna was mounted on the centerline, on a doubler plate shaped as shown in the illustration at left. On F-4Es the depot installation mounted it on a tear drop shaped plate, offset to the right of the IFF antenna, as shown in the middle illustration. The factory installation was simpler and lacked the mounting plate. Many F-4s retained these antennas (or just the mounting stub) for many years after the US withdrawal from Southeast Asia, well into the 1980s.

In case you're wondering...



Feel free to mix & match colors on these

Aft fuselage turbine warning stripe

Stuff we forgot

Hill Gray scheme insignias

Filler caps for external tanks

Just about all the types of insignias we could find

F-4D Combat Tree destruct system warning seen on LH intake splitter

More stuff we forgot

White outlined insignias for those beautiful white and orange Edwards jets

Insignias & titles for ADC Gray birds

Screw heads for structural skin panels. Note two different spacings

Hill Gray scheme stencil data

Hill Gray scheme stencil data

The Very, Very Last Page!

(Really important stuff that didn't fit anywhere else)

Some random thoughts on modeling F-4s - in no particular order:

- When looking at details of the early Mk.H5 and later Mk.H7 seats, note that the "H" is important. A Martin Baker Mk.5 is not the same seat as a Mk.H5 at all. Be sure you know what you're looking at.
- Things that droop as soon as the engines are powered down:
  - Ailerons (but not flaps) droop gradually. Only a little when the power is first turned off, then keep drooping for days if the aircraft isn't powered on. So any variation in amount of droop is realistic based on how long since power was removed. Droop can be asymmetrical.
  - Lower wing speed brakes - same principle as the ailerons.
  - Engine auxiliary intake doors (Doors 81R and 81L): fully open when engines are shut down. They close immediately and violently when power comes on (and will take your hand off if it's in the way!)
  - Gun gas purge door (F-4E/F only, decal C53) fully opens immediately when power is removed and closes when power is applied to the aircraft. It opens in-flight when the gun is fired.
  - Drag chute hatch door/tail cone is generally open after landing and parking (assuming aircrew used the drag chute on landing, which was the normal procedure). It would normally stay open until the crew chief packed a new chute for the next flight.
- Canopies should be mounted either fully open or fully closed. It was **not possible** to stop the canopy at a point in between, and photos of them in an in-between position are very rare. Any such photo is an "in-action" photograph, where the canopy was actually moving to the fully open or fully closed position at the exact moment the photographer tripped the shutter. Based on careful photographic measurements, a typical fully open position is approximately 40-42 degrees from the static ground line, or 52-54 degrees from the canopy sill. Try to ensure both canopy lower frames are parallel. If the angles are significantly different, your model will look odd.

- Wheels/tires: USAF style main gear brake assemblies in the center of the hub were a rusty steel color, often with dark grey/black residue. Tires inflated normally had very small flat spots but did not bulge noticeably. They were high pressure tires with very strong side walls.
- Weathering the undersides: Phantoms were generally very clean forward of the line defined by the main wing spar. Behind that they were filthy along the panels under the engines (but not the intakes forward of the engine bays) and the wings were lightly to medium dirty around the wheel wells and behind the speed brakes and flight controls (flaps, ailerons and spoilers on top). See weathering page.
- Between 1974 and 1983, if present, the arrowhead shaped doubler plates on the horizontal stabs were ***only*** on the upper surfaces. After 1983 they could be found on the top only, bottom only, top and bottom, or absent - but always symmetrical left and right.

- The natural metal area behind the engines on Vietnam through late 70s era Phantoms was ***filthy***, with a **heavy** buildup of velvety black soot. It was not until the "smokeless" (there's a real laugh) engines appeared in the late 1970s that this changed. Most scale models don't portray just how dirty Phantoms were in those days, so go for it with the soot! For 1990s and later (i.e., modern Greek, Turkish, and South Korean jets) go nuts with the metallurgy experiments in different burnt titanium colors, after cleaner "smokeless" engines were fielded in the late 70s, but earlier jets were **NASTY**. The concrete in the last chance pit at Udorn RTAB proves it!
- If you're depicting an F-4 powered up and taxiing out for a strike, then all those ailerons, speed brakes, engine aux doors, and gun gas purge door (on F-4Es) should be up/closed/tight while engines are running. Drooping ailerons and/or speed brakes on a jet in the last chance arming pit is something you just wouldn't see in the real world.
- Other mentionable factoids:
  - Almost never during the Vietnam War, did a USAF F-4 have any combination of bombs, missiles, or rockets on the inboard pylons while also having AIM-9s on that same pylon. Until the Sidewinder launcher spacers (demanded by Robin Olds) became available it was physically impossible to mount both on the same pylon.
  - The same holds true for the Navy & Marines until roughly Linebacker and Linebacker 2 in 1972.
  - USAF F-4Ds and some early Es did mix one AIM-4 Falcon missile with some combination of bomb/bombs on the inboard pylons, but the Falcon didn't last long in Southeast Asia. Copy your references for these configurations closely (and also provide copies of those photos to the IPMS judging committee if you're entering a model contest).
  - You can find photos of late Navy jets with 2x AIM-9s and a TER full of Mk 82s, but this configuration is unlikely to have happened more than a handful of times during the late stages of the war, and did not happen at all during the early cruises of the Rolling Thunder campaign, as, again, it was physically impossible before the AIM-9 rail spacers.
  - Normal position for the horizontal stabs is with the leading edge a few degrees higher than the trailing edge. This slightly aircraft nose-down position was a standard trim setting for ground ops and parking. Occasionally you'll see a photo with the stabs in a dead neutral (straight/level attitude), and even more rarely you might see the stabs at angled leading edge down, however this is really only seen on powered aircraft about to launch.

The End!!

(See, that wasn't ***so*** bad, was it?)

Photos: fündekals collection

Thanks to phellow Phantom Phanatics Scott Wilson, Kim Simmelink, Jeffrey Kubiak, Peter Greengrass, Jun Temma, Andreas Klein, Brian Nicklas, Fotios Rouch, Henk Schuitimaker, Don Gilham, Jerry Hughes, Rob Martare, Clint Rowland, Mark Richardson, Henk Schakelaar, Es-haq Khosravi, Tom Neal, Tommy Thomason, Keith Svendsen, and Yosi Yaari for their incredibly kind and generous assistance on this project...

And a most hearty and very special thanks to my good phriend Chris Mayer, who suffered through my endless texts and emails obsessing over the most arcane of Phantom details, and who always came up with the most amazing photos of exactly what I was looking for. Without him, this project, to put it quite simply, could not have happened!

SPOOK ON GUYS!